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NEWS ISSUE — MAY 20, 1948

A 125-ft. long, 54-ton steel girder arrives for new highway bridge near Redding, Calif.

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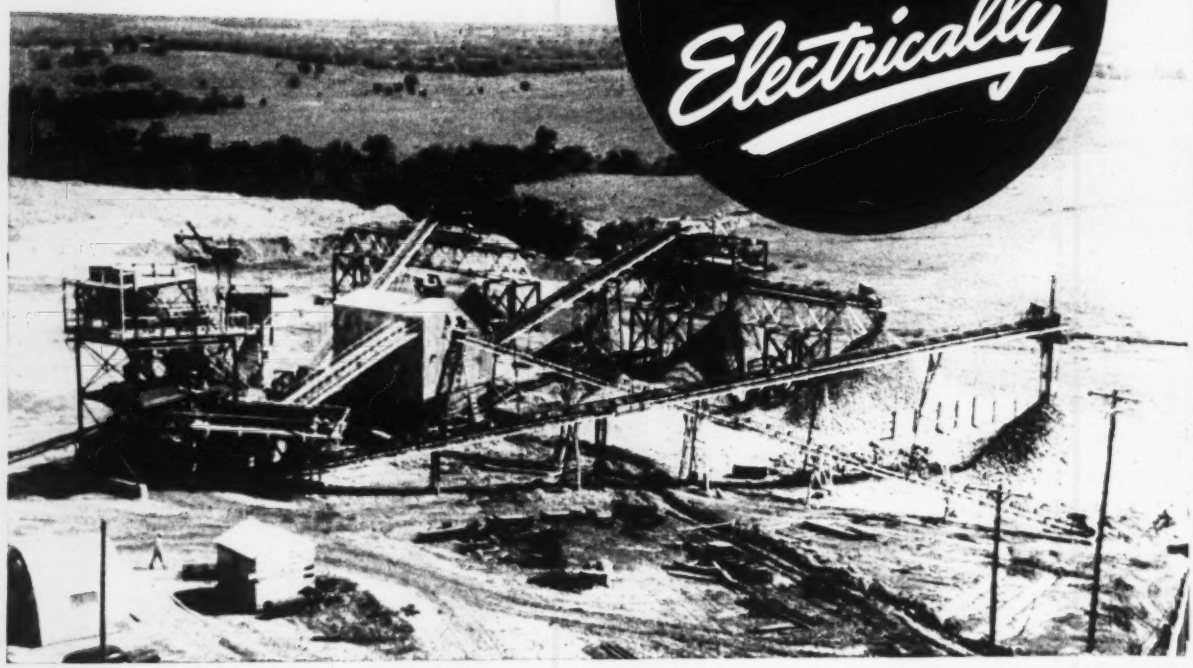

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GENERAL ELECTRIC

News of the Week

ENGINEERING NEWS-RECORD • MAY 20, 1948 • VOLUME 140 • NUMBER 21

Engineering, medical gains seen defeating malaria

Fourth International Congress on Tropical Diseases hears of huge drop in the rate of the disease in U. S.

Malaria is now a "diminishing and retreating" disease in the United States, thanks to advances of medical and engineering science, delegates to the fourth International Congress on Tropical Medicine were told last week.

Held at Washington, D. C., the ten-day congress attracted more than 2,000 delegates from 44 nations to hear discussions of wartime and postwar developments in combating tropical diseases.

Justin M. Andrews of the U. S. Public Health Service summarized the gains against malaria in the United States. He said that the death rate from the disease during 1946, and the reported cases in 1947 were about one-fifteenth of the 1920 figures. "Relapses due to malaria acquired in other countries have increased the reported case rates in the last four years," Dr. Andrews said, "but the effect is vanishing rapidly. As far as can be ascertained, the presence of infected individuals throughout the country has not resulted in widespread transmission of the imported parasites."

Control measures

Management of water levels in impounding reservoirs to control or eliminate mosquito breeding has helped reduce malaria in the Tennessee Valley almost to the vanishing point, Calvin C. Kiker, senior sanitary engineer of the malaria-control branch, Tennessee Valley Authority, reported.

Principles of water-level management, he said, apply equally to both storage and main river reservoirs, even though operational requirements of the two classes of pondages differ.

He listed four phases of water management for mosquito control to be fitted into the normal operating scheme for carrying out the purposes of the development. These phases are: (1) Flood surcharge—raising the water level above normal elevation in the spring and lowering it later to strand drift and floatage; (2) a relatively constant level pool—maintaining water at normal elevation until the beginning of mosquito-breeding season to limit marginal growth invasion by vegetation; (3) periodic water-level fluctuation—varying the level about one foot each week; and (4) seasonal recession—applying to large reservoirs where use of stored water begins about mid-summer.

In reservoirs where water level is not drawn down in summer, periodic fluctuation alone is effective, provided the scope is made 1½ to 2 ft., the engineer said. Water-level recession alone can also be effective, if the reservoir has been cleared properly and if shoreline maintenance is adequate. Water-level control is also effective for natural ponds, he added, where conditions are favorable for building and operating water-control structures.

Medical advances

Accelerated wartime research furnished some answers to tropical disease problems. Medically, an outstanding discovery was the reported finding of a "missing link" in the malaria cycle in the human body. Dr. H. M. Shortt, director of the department of parasitology, of the London (England) School of Hygiene and Tropical Medicine, said experiments have shown that malaria parasites lodge and incubate in the liver from the fifth to the tenth day, before entering the blood stream.

Declaring that eradication of certain malaria-carrying species of mosquito in the Americas is feasible, Fred L. Soper, director of the Pan American Sanitary Bureau, pointed to successful campaigns in Bolivia, Brazil, Peru, Dutch Guiana, and Egypt. "In the long run," Dr. Soper said, "eradication is less expensive than partial control service, especially if the initial campaign is pressed when conditions are least favorable for breeding.

Ban on unregistered engineers fails

A move to obtain use of injunctive power to bar unregistered engineers from practice in British Columbia, (*ENR* Feb. 12, vol. p. 220) failed when a redraft of the provincial engineering profession act was tabled for six months' by the municipal committee of the legislature.

The present act, which gives the British Columbia Professional Engineers' Association legal status as the licensing authority and sets out regulations covering the profession, provided only for criminal action against individuals ignoring the legislation. The redraft sought to place the responsibility for employment of qualified men on the employer by inclusion of a provision for civil court action against those using unregistered engineers on projects which under the act call for use of professional men.

Particularly hit would be municipal councils and village commissioners, who would be compelled to employ professional engineers on all public works, where hitherto a municipal engineer without professional standing might have acted.

Principal opposition to the bill came from the Union of B. C. Municipalities.

R. R. F. Sewell, secretary of UBCM, told the House municipal committee, that no municipality or organized district had been consulted regarding the proposed legislation, and that this was directly contrary to specific provisions of the Municipal Act which provided that municipalities must be consulted on any matter affecting their interests.

He contended the bill would work a great hardship, especially on smaller municipalities and organized districts.

Also postponed for six months was a bill that would require every building or repair project within a municipality valued at more than $10,000 to be approved by a registered architect.

Both bills were sponsored by the professional associations concerned.

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Housing—George I. Marcus and Theodore J. Vogel will build a garden apartment group for 262 families in *Dumont, N. J.* . . . Twin apartment houses for 124 families are planned for *Fleetwood, N. Y.*, by Tishman Realty and Construction Co. . . . Lancaster Housing Association, Inc., *Lancaster, Pa.*, will build a $1,000,000 apartment development there . . . Curtis-Wood, Inc., will build a $1,000,000 residential development at *Glenside, Pa.* . . . Patrick Warren Const. Co. has a contract to erect a 14-story and penthouse apartment building, with 124 apartments, at the N.W. corner of 56th St. and Dorchester Ave., *Chicago, Ill.*, largely for the staff of the University of Chicago . . . D. W. K. Bldg. Co. has completed the first unit of a $5,000,000 residential development in *Los Angeles, Calif.*, eventually 400 dwellings . . . Kessler Homes, Inc., has started an 82-home project at the south edge of Hoosier Airport, *Indianapolis, Ind.* . . . Art Flesher expects to build at least 52 new housing units next year in a new addition at *Coffeyville, Kan.* . . . Howard Green will build a $1,050,000 home development in northeast *Philadelphia, Pa.*

Public Construction—Army Engineers have approved a project for construction of a 7.7-mi. channel, 100 ft. wide and 10 ft. deep, in the Columbia slough at *Portland, Ore.*, to provide shipping facilities for industries. A building program at the municipal power station in *Jamestown, N. Y.*, is expected to begin next fall. . . . *Cambridge, Mass.*, recently voted a $700,000 program, with $190,000 for first year cost, to remodel public school and municipal buildings . . . Bids on a $6,000,000 high school building are being sought by the *Philadelphia, Pa.*, board of education . . . First Baptist Church, *Washington, D. C.*, has started plans for a $1,000,000 church and Sunday school building . . . An appropriation of $591,500 has been asked of the Allen County council for improvements at the Irene Byron Sanatorium, *Fort Wayne, Ind.*

Industrial Construction—For this year and next, the Southern Indiana Gas & Electric Co. plans $9,300,000 of improvements at *Evansville, Ind.* . . . . . British American Oil Co. has started building a $15,000,000 oil refinery at *Montreal East, Que.* . . . Chemical Const. Corp., New York, has a contract from the Lion Oil Co. for design and construction supervision of a $3,500,000 addition to its chemical plant at *El Dorado, Ark.* . . . Sun Oil Co. is considering bids on a $1,000,000 natural gas processing building at *Sunfield, Tex.* . . . E. I. du Pont de Nemours and Co., Inc., has plans nearly ready for a $17,000,000 experimental station near *Wilmington, Del.* . . . Minnesota Mining & Mfg. Co., St. Paul, Minn., will build additions, etc., at the former Fleetwings plant, *Bristol, Pa.*, at a cost of $1,000,000 . . . Asten-Hill Mfg. Co., *Philadelphia, Pa.*, will build a $1,000,000 manufacturing plant there . . . The White Construction Co., Inc., of New York has started construction on a $1,000,000, 5-story reinforced concrete addition to the Life Savers Corp. candy factory in *Port Chester, N. Y.* The 110,000 sq. ft. addition will more than double space and production. Lockwood Greene Engineers, Inc., prepared the plans.

Highways—Pennsylvania State Highways Department received a low bid of $1,098,000 for the Vine St. railway and highway overpasses in *Philadelphia.* . . . Building of the system of super streets at *Louisville, Ky.*, will begin in about 4 months on a section from Breckinridge Lane to Bardstown Road. The estimated cost of this 2¼-mile unit is $426,000 . . . Indiana Highway Commission will take bids May 27 on a new 5-span reinforced concrete 548-ft. bridge with a 58-ft. roadway to replace the Emerichsville Bridge over White River at 16th St., *Indianapolis*, at an estimated cost of $900,000 . . . Southeast Ohio Regional Council has proposed a superhighway from *Mansfield, Ohio*, to the Ohio River, which would take in Routes 13, 664, and 75 . . . The *Montana* highway commission recently awarded $1,299,503 worth of road and bridge contracts to 12 bidders. Included were those for grading, draining and surfacing 90 miles of roads and the building of 12 bridges. . . . Highway Engineer Mark U. Watrous reported recently that $6,200,000 worth of road work has been advertised, awarded or placed under contract by *Colorado* since the first of the year.

Seek $46 million for rivers, harbors

A bill (H. R. 6419) authorizing approximately $46,000,000 of public works on rivers and harbors and flood control construction has been introduced in the House. The measure would authorize $20,887,900 to be appropriated for river and harbor work and about $25,000,000 for flood control improvements. The Public Works Committee promptly approved the measure for action by the House.

Flood control projects enumerated in the bill call for authorized appropriations totaling $22,875,000, but the Corps of Engineers expects to request additional sums for these projects which will bring the total up to $25,000,000.

Much of the rivers and harbors work will be done in Texas, where $5,057,000 will be spent to improve Galveston harbor and channel, Texas City channel, and the Houston ship channel. At Pillow Point-Halfmoon Bay, Calif., $4,500,000 of work is estimated to be done. Other large jobs include: Grays Harbor and Chehalis river, Wash., $3,605,700; Port Aransas-Corpus Christi waterway, Tex., $2,250,000; and Norfolk Harbor, Va., $1,730,000.

A major flood protection improvement for the west Tennessee tributaries of the Mississippi River below Cape Girardeau is estimated to cost $7,700,000. Other proposed flood control work listed includes: Santa Clara River basin, $4,960,000; Upper Mississippi basin, $3,300,000; Gila River basin, $2,390,000; Great Lakes basin, $2,070,000; Ohio River basin, $1,515,000; and the Arkansas River basin, $940,000.

The measure also authorizes an additional appropriation of $25,000,000 for emergency flood control operations, and $10,000,000 for the departments of the Army and Agriculture for surveys.

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New strikes, accords spot labor scene

Construction labor continued to present a spotty picture last week, with almost as many new strikes reported as there were settlements of previous disputes.

Almost without exception, the disputes involved demands for higher wages. There were two strong sidelights that involved the strengthening of anti-strike provisions of the labor code for British Columbia, Canada, and requests for increased pay for state professional and construction employees in North Carolina and Nebraska.

Briefly, the labor situation was:

Settlements—*New York City* plumbers accepted an agreement freezing wages, hours and working conditions until June 30, 1950, setting wages at $3 an hour for a 7-hour day, and permitting unrestricted use of power-driven machines for cutting and threading pipe on the job. The *Porter County, Ind.*, Building and Trades Council approved the use of student labor at 50 cents an hour to build a new engineering school at Valparaiso University, after the university said that funds were not available to employ construction labor at full scale.

Striking plumbers at *Miami, Fla.*, returned to work after approving a temporary agreement for an 11-percent wage increase. *Philadelphia, Pa.*, building wages were said to have reached an all-time high after signing of contracts between home builders and various unions that provide for general increases averaging $10 per week.

Union carpenters and heavy machinery operators at *Jamestown, Ky.*, voted to return to work on Wolf Creek Dam, without having received any increase in pay. Carpenters at *Niagara Falls, N. Y.*, settled a recent strike on the basis of an unannounced agreement with contractors, and hodcarriers in the same area accepted a 20-cent-an-hour increase. Plumbers at *Dayton, Ohio*, accepted an 11-cent hourly increase to bring their scale to $2.26 an hour.

Strikes—Union plumbers at *Erie, Pa.*, went on strike to emphasize their demand for a 35-cent an hour increase. Bricklayers at *Troy, N. Y.*, were refusing to work on some projects because of what they said was contractors' refusal to pay overtime.

A strike was reported at *Fitchburg, Mass.*, where bricklayers demanded a 35-cent-an-hour increase to $2.50 an hour. The building trades strike at *Buffalo, N. Y.* spread to *Dunkirk, N. Y.*, halting work on the fill in the harbor for a $27,000,000 Buffalo-Niagara Electric Corp. steam generating plant. A strike of 150 sandhogs tied up construction of the $10,000,000 aqueduct between *Newton* and *Brookline, Mass.*, where strikers sought a 22½-cent-an-hour wage increase.

Other developments

Anti-strike provisions of British Columbia's labor code were tightened and in recent actions of the provincial legislature new provisions made to outlaw coercion of employees by either employer or labor groups. The new provisions strengthen the original Industrial Conciliation and Arbitration Act of 1947, giving a 5-man labor relations board wider powers, including the right to issue "cease and desist" orders if either an employer or a union violates terms of the act.

Governor Val Peterson of Nebraska announced that salary increases averaging about 10 percent have been granted to engineering employees of the state. The North Carolina State Highway Employees Association asked Gov. R. Gregg Cherry to call a special session of the legislature to consider increases in state pay scales.

Philadelphia-Camden bridge to be widened

The Delaware River Bridge between Philadelphia, Pa., and Camden, N. J., will be widened from six to eight lanes according to final plans recently released by the Delaware River Bridge Commission. The move will increase traffic-handling capacity of the bridge 37 percent, and the cost will be slightly under $3,000,000, including a mercury-vapor lighting system.

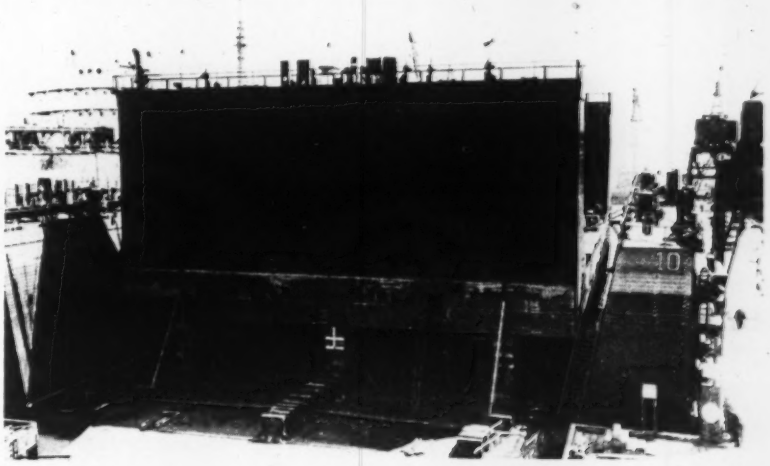
Plans submitted by Frank M. Masters, of the consulting firm of Modjeski and Masters, call for widening the roadway from 57 to 79 ft. on the suspended spans, and to nearly 78 ft. on the approaches. The report said the bridge can be widened without interrupting traffic because space was left in the original designs for trolley tracks just outside the motor lanes. These tracks have never been placed on the bridge.

Two alternative plans aired for Rogue River

A public hearing on two alternative plans for the development of the water resources of the Rogue River basin will be held in Medford, Ore., on June 8, Regional Director R. J. Newell of the Bureau of Reclamation recently announced.

The two plans, known as A and B, have a general physical similarity, the most significant difference being in the amount and location of storage reservoirs. Plan A, to cost $89,824,700 at 1947 price levels, involves 9 storage dams, with reservoir capacity of 517,900 acre-ft. and 6 power dams, 8 dams to be built on tributaries of the Rouge and 7 on the main stream. The storage dam farthest downstream on the main Rogue would be at Lewis Creek.

Plan B, to cost $83,903,200, calls for 11 storage dams, capacity 353,400 acre-ft., and 5 power dams, 7 on the main stem and 9 on the tributaries, with the lowest storage dam on the Rogue at Lost Creek.



DOCK IN DOCK—Dredging operations in the Todd shipyards in Hoboken, N. J., recently resulted in this self-docking situation. To provide space for the dredges, one section of floating dock was placed atop two others.

DEVELOPMENTS BEYOND U. S. BORDERS

Digested from reports by Engineering News-Record correspondents and the McGraw-Hill World News Bureau

Work is progressing on the Saudi Arabia oil pipeline—England starts building first movable aluminum bridge—Radioactive substances bill introduced in House of Lords.

Saudi Arabia—Construction is about to begin on the second leg of the disputed Trans-Arabian pipeline from the Persian Gulf to the Mediterranean (*ENR* April 10, 1947, vol. p. 544). American interests involved include those of the Texas Co., Standard Oil of California and New Jersey, and Socony-Vaccum Oil Co.

The first stretch of the line—2 30-31-in. pipe project that would pour 330,000 bl. of oil into the eastern Mediterranean area daily—was completed last week. It runs parallel to the shore of the Persian Gulf near the large Abquaia oilfield, to Qatif, just north of the Dommam Dome, and the oil settlement at Dhahran, Saudi Arabia.

The completed branch is to be 43.4 miles long and will begin carrying oil as soon as the tie-in is made at the Qatif development. The terminus for this leg will be at Abu Hadriya, a proven but undeveloped field. It is expected that this field eventually will produce 100,000 bl. a day.

This extension is taken for granted and the big question now is whether to push the line further west towards Trans-Jordan and Syria through which the oil line must pass to reach the Mediterranean port of Sidon, Lebanon, a few miles north of the Palestine Border. There is enough steel now in Arabia or on the way to carry the line a considerable distance beyond the second leg, but there is some doubt about future supplies. On March 17, U. S. Defense Secretary James V. Forrestal told the Wherry Small Business Subcommittee of the Senate that the project is being reviewed in the light of unrest in Palestine and elsewhere in the Middle East. However, studies by the Joint Chiefs of Staff and the National Munitions Board both favor the request for second-quarter steel, scaled down to 19,000 tons. This amount is only a drop in the bucket as compared with the 360,000 tons needed to extend the line to Sidon.

Terrain problems are expected to grow as the line progresses west. Another factor involves negotiations with local tribal chieftains on problems such as rights-of-way and working standards for the local Arab laborers. The route passes through numerous jurisdictional areas where the ruling sheiks are not conversant with American operational procedure along the Gulf area. These problems have been difficult even under normal conditions, and with the Saudi Arabs considering participation in a Palestine war conditions might very easily become worse.

From an engineering standpoint, one of the toughest obstacles is the geo-political problem of erecting sand fences over the line at stated distances to permit passage of camels and goat herds belonging to the desert Bedouins. Camels seem to have an aversion to crossing pipelines and the size of this one would make it impossible even if this weren't true. Restrictions on the free movement of Arabia's nomadic tribes could result in the kind of local jurisdictional trouble that might necessitate costly re-routing of the line.

Highways . . .

Korea—Construction of a 150-mile national highway to connect Seoul with the east coast region from Samchok to Kangnung is planned. Cost of the project is estimated at 100 million won ($2,000,000 at the official U. S. Army conversion rate).

Portugal—The Ministry of Public Works has announced that the Portuguese government has placed a contract of several million dollars for construction of a bridge across the Tagus River at Vila Franca de Xira, with the British firm of Dorman, Long and the Lisbon firm Empreita das e Trabalhos Hidraulicos, Ltd. The bridge, which is to be completed within three years, will provide an important link with southern Portugal.

Turkey—L. Sterling Hedgpeth, senior highway engineer with the U. S. Public Roads Administration, is now in Turkey, having joined a group of PRA engineers assisting that country in laying out a modern highway network under the Turkish Aid Act passed last year. (*ENR* Dec. 4, 1947, vol p. 765).

For the last four years Mr. Hedgpeth has been employed in the department of design in the Washington office of PRA, and during the war was engaged in the design and construction of airfields and facilities in Puerto Rico and Brazil.

Brazil—A new highway is under construction to link the city of Sao Paulo, Brazil's industrial center, and Belo Horizonte, capital of the state of Minas Gerais. The air-line distance is about 300 miles.

Sovfoto

RUSSIA BOOSTS POWER—New unit in Russia's drive for greater industrialization of its vast land areas is Farkhad Dam, across the Syr-Dara River in Uzbekistan, scheduled for completion this year. A concrete structure, the dam is a half-mile long and 65 ft. high. Its waters will pass through a power plant and then be used for irrigation purposes.

At Rio de Janeiro, city officials said that construction of an auto tunnel to speed cross-city traffic between Rio's northern and southern zones will begin this month. Passing through a mountain to connect the districts of Laranjeiras and Catumbi, the tunnel will be about 4,060 ft long, 58½ ft wide and 6.60 21½ ft. high. A local firm has the contract.

City authorities say cars will be able to go from Harbor Pier 15 to the Copacabana district in 15 minutes, avoiding the heart of the city. At present, in non-rush hours, the trip takes about half an hour.

England—A proposed North-South motorway through Lancashire between points near Carnforth and Warrington, designed for 70 mph. traffic and involving the building of 118 bridges, will cost an estimated $48,000,000 British highway engineers say. Thirty-three miles of motorway links will involve an additional $25,000,000.

FLOATING POWER—Boosting the power available to expanding industrial and residential areas in San Juan, Puerto Rico, is this former Army-owned floating powerhouse, operated by the Puerto Rico Water Resources Authority. The powerhouse, 358 ft. long, is an oil-burner, and can produce nearly enough electricity to supply the city's 200,000 residents. It supplements local power stations, pending construction of contemplated hydro and steam power stations.

Bridges . . .

England—The world's first moving-span bridge to be made of aluminum alloys is being constructed for use as a crossing of the River Wear at Sunderland, near Newcastle. Its weight will be only 40 percent of an equivalent steel bridge, but, it is claimed, it will be equally strong, far less susceptible to corrosion, and more economical in the power used by the lifting mechanism.

Spanning the junction of the Hendon and Hudson Docks at Sunderland, the bridge is to be a twin-leaf trunnion bascule type, the movable spans consisting of two pony trusses with flooring for the roadway. The clear span of the waterway is 90 ft., and the roadway is designed to carry a 4-ft. 8½-in. gage railway track and road traffic. The clear width between trusses is 18-ft. 6-in.

Machinery for operating the bridge is placed below ground level, and engages with a curved rack at the tail end of each truss. When the bridge is opened the ends of the trusses descend into watertight compartments in the abutments. The operating gear for each leaf will be driven by two electric motors, and hand gear will be provided for use in case of failure of electric power.

Iraq—The first railway bridge ever to be built across the Tigris River is now well under way at Baghdad, to give direct access from Basra to Kirkuk. The total length of the bridge and viaduct is 7,104 ft. and the length of the multispan river crossing is 1,509 ft. The contractors, Holloway Brothers (London) Ltd., have already built two road bridges in Baghdad and are building a new railway station for the Iraq State Railways.

Radioactivity . . .

England—A radioactive Substances Bill was introduced in the House of Lords recently. Its aim is to protect the health of workers and the public from the harmful effects of exposure to radioactive substances, natural or artificial. Radium and radon and certain irradiating apparatus, principally X-ray tubes, are covered by its provisions. Regulations will impose codes to protect employees in hospitals, laboratories and industrial establishments not already covered by legislation, where radioactive substances or irradiating apparatus are manufactured, treated, stored, or used. The disposal of radioactive waste will be controlled and regulations may be made to prevent injury during the transport of these substances.

Transport . . .

Argentina—The government is preparing plans for the construction of a new aeronaval base in Rio Grande Tierra del Fuego. The estimated cost is over $1,000,000.

India—Indian railway engineers are at work on the line linking the provinces of West Bengal and Assam—now almost separated by the Pakistan province of East Bengal—to give a through connection which was cut off by the partition and the passing of East Bengal railways to the new dominion. The work calls for the conversion of 70 miles of track between Kishanganj and Siliguri from narrow-gage to meter gage and the construction of three links totalling 60 miles between Siliguri and Citaldaha. The latter portion will involve the bridges over four Himalayan streams.

Lebanon—Work has started on the Beirut International Airport, according to Arthur E. Howard, U. S. engineer who has been engaged by the Lebanon government to give technical advice on airport matters.

About 3,000,000 cu. yd. of excavation will be needed and the total cost of the airport is expected to be nearly $11,000,000, with completion by the end of next year. The work is under the supervision of Gabriel Bey Murr, Minister of Public Works and the government engineer is Zare Bagdasarian.

Power . . .

France—The electricity investment, chiefly for hydro power, has been cut down 22 percent in an anti-inflation and budget-balancing move by the Government.

Construction activity on railways will also be cut.

The electricity program, which called for doubling the country's prewar capacity to 40 billion kwh. in 1951 chiefly by building new dams and hydro plants, will be slowed down but not stopped. Last year new hydro stations representing 853 million kwh. annual capacity entered into service. Hydro projects now under construction will have 11.5 billion kwh. capacity, more than the country's whole hydro capacity in 1938. This includes the giant Genissiat project, now partially in service.

Random Lines *from an editor's notebook . . .*

. . . . *In which are reported some of the reasons why sulphur joint compounds are providing a mystery for waterworks engineers*

Discussion of the behaviour of sulphur joining compounds in some localities where it had been observed that the material disintegrates or is believed to cause pitting of spigots and the breakage of bells in cast-iron pipe claimed a major share of attention at the recent Atlantic City meeting of the American Water Works Association.

Last year, when this matter was taken up for the first time by the association's committee on waterworks practice in a closed session, there was some criticism that the subject deserved a complete airing before the entire membership. This opportunity was afforded through a panel discussion, on which was heard an account of experiences of users from coast to coast, statements from two compound manufacturers and comments from a representative of the Cast Iron Pipe Research Association. Importance of the meeting was indicated by the use of a recording device to capture every word that was spoken.

Difficulties outlined

Reported difficulties were of three types: (1) Complete or partial disintegration of the sulphur compound in the joint after the material had been in place for a varying number of years; (2) pitting and corrosion of the spigot end of the pipes, in many cases this being observed as a ring formation in the vicinity of the jute used in making up the joint; and (3) cracking of the bell on the pipe, probably as the result of a swelling of the compound.

There is much mystery, however, as to the probable cause or causes. Investigations show no consistency with regard to soil conditions, presence or absence of sulphur bacteria, galvanic action or installation methods.

W. Victor Weir, president of the St. Louis County Water Co., reported "some failures, but nothing to cause alarm or a switch to a more expensive jointing material". About 700 miles of his distribution system is jointed with sulphur compounds, in which 15,000 joints are more than 20 years old and 125,000 are older than 15 years. Recognizing that the failures are real but that the causes are obscure, Mr. Weir expressed the belief that present-day research techniques might be applied to find the answer.

City Engineer Joseph P. Schwada of Milwaukee stated that further use of sulphur compounds was prohibited in 1946 when he discovered disintegration of joints as well as pitting of some pipe. His concern is with the probable reduction of useful life of the cast-iron pipe in the distribution network, should the corrosive action continue at the same rate as now observed. On this basis, Mr. Schwada estimated that the life of one of his 6-in mains would be only from 30 to 60 years.

Martin Flentje, research engineer of the privately owned American Water Works Co., which operates facilities in a number of states, said that sulphur compounds were used on a "selective basis". Acknowledging that the compounds were satisfactory in many areas under his company's supervision, experience has revealed that in a few places it was best not to use them.

The experience of Roger Esty, superintendent of water at Danvers, Mass., indicates that faulty workmanship in pouring the joint—either too hot or too cold—may be a cause for subsequent failures. He also raised the interesting question whether bacterial organisms associated with jute packing might not act on the sulphur compounds and thus cause pitting of the cast-iron pipe.

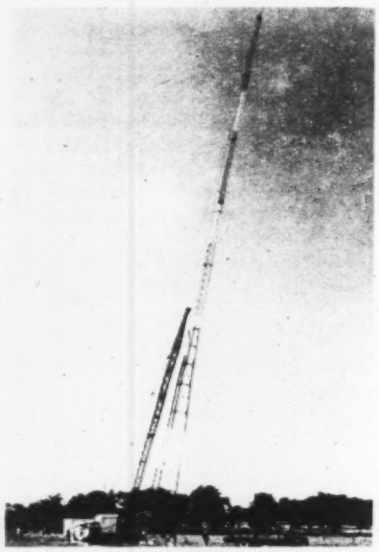


Photo from Thew Shovel Co.

GOING UP—Dwarfed by its load, a crane uses a 90-ft. boom to raise a 200-ft steel radio tower at Rochester, N. Y. The tower is 8 ft. by 8 ft. by 8 ft. at base. Contractor was C. P. Ward, Rochester.

Speaking as the manufacturer of "Bondo", one of sulphur compounds, Guy C. Northrup, president of Northrup & Co., Spring Valley, N. Y., said that in 20 years of experience only one report had reached him relating to the disintegration of his material. This case involved joints in a line laid in the vicinity of a heavy-gun firing range where there was much ground vibration. Furthermore, the pipe had been sterilized with copper sulphate, a chemical whose crystals will cause expansion upon hydrating.

Until this meeting, said Mr. Northrup, he had had no knowledge of bell breakage. Manufacturers, he asserted, are ready to accept responsibility for making changes in the ingredients of their compounds should this be indicated on the basis of findings. He declared that his company would supply a product with a germicide if customers request it.

A great amount of research has been done over the years to improve sulphur-jointing compounds according to C. R. Payne, vice-president and technical director of the Atlas Mineral Products Co., Mertztown, Pa., makers of "Mineralead". He cited improvements in chemical resistance as well as resistance to shock and thermal changes. Then he pointed out that although only one report has ever appeared in the literature relating to the possible action of sulphur bacteria in the soil, his company has acted to minimize such activity by adding a germicidal agent to their compound.

Pipe industry interest

In the opinion of Thomas F. Wolfe, research engineer of the Cast Iron Pipe Research Association, the difficulties relating to the use of sulphur compounds does not rest on the compounds by themselves but in the combination of the compound with certain soil conditions. He suggested a research program, the results of which might lead to changes in composition of compounds under special conditions.

The remedy for present difficulties with bell cracking is not to ask for an increase on the strength of bells to compensate for the occasional swelling stresses that might occur, stated Mr. Wolfe. Pipe with stronger bells would cost more and there would be little justification for its use in most cases.

Although the panel discussion brought forth a lot of interesting information, the mystery of abnormal behaviour of the compounds under certain conditions was brought no closer to a solution. One delegate summed it up in this fashion: "Now I'm more confused than ever before".—*E.J.C.*

Northwest sewage men hear ozonation report

Sewage plant at Kelso, Wash., termed not successful—Discuss polio virus in sewage—AWWA meeting also held

A sewage plant at Kelso, Wash., that was built to use ozone for the principal treatment was called unsuccessful for all practical purposes by a committee of the Pacific Northwest Sewage Association, meeting at Boise, Idaho, last week.

At the meeting there were also discussions of a polio epidemic in Idaho, and sessions of an associated waterworks group addressed by national officers of the American Water Works Association.

The committee report—presented by Chairman Ray E. Koon of Portland, Ore.—dealt with a plant built at Kelso by the firm Amozone of Oregon. The agreement under which construction started more than two years ago required the company to build a plant capable of producing certain guaranteed results. The city was to make no payment until after the plant was "ready for operation". However, the plant was operated for only about two weeks (*ENR* March 6, 1947, vol. p. 353) and then shut down for extensive repairs and revisions in the original equipment. Finally, in December, 1947, the company contended the plant was completed, and requested payment.

The city refused payment, and the plant was locked up. No payment suit has been filed.

After characterizing the plant as unsuccessful, the committee report said that "there appears no reasonable evidence that it (the plant) will be acceptable on the basis of contract obligations."

Polio virus in sewage

In other sessions, three speakers pointed out that an infantile paralysis epidemic in 1947 has accelerated sewage-works programs in Idaho cities, even though no definite relation has been proved between the epidemic and sewage contamination.

Mayor Potter P. Howard of Boise said that after two unsuccessful bond elections, voters approved a bond issue for sewer work in his city by a 10 to 1 majority, after the possibility of the spread of polio by contaminated river water was publicly discussed.

E. C. Clare, director of the public health engineering division, Idaho Department of Public Health, and Wendell H. Smith, consulting engineer of Preston, Idaho, emphasized the lack of proof of a connection between the epidemic and contamination, but commented that the possibility, nevertheless, had helped the start of sewage programs in several Idaho cities.

In a similar vein, C. T. Wright, sanitary engineer director, U. S. Public Health Service, Denver, Colo., said that polio virus and dysentery cysts are not removed from contaminated water by ordinary treatment processes. Breakpoint chlorination does kill disease-spreading germs, he said, but pointed out that such treatment is expensive.

New officers of the group include: K. H. Spies, associate Oregon state sanitary engineer, president; Emil C. Jensen, chief, Washington division public-health engineering, vice-president, and W. P. McNamara, Seattle sewer maintenance engineer, second vice-president.

Fluorides in water supply

The prediction that public pressure will be so great as to force fluorination of water supplies was voiced before sessions of the Pacific Northwest Section, American Water Works Association, by Dr. Walter Pelton, dental consultant to the U. S. Public Health Service.

Speaking before a session held concurrently with the sewage works meeting, Dr. Pelton reminded the group that Lewiston, Idaho now has a fluorination program under way, with the full support of the townspeople and the medical profession. The Lewiston results will be considered conclusive for a number of years, he added.

Louis R. Howson, of the Chicago consulting firm of Alvord, Burdick and Howson, repeated a warning that water rates must be increased an average of more than 30 percent to prevent bankruptcy. N. T. Veatch, past president of the national AWWA organization, in a banquet address repeated the AWWA stand that stream pollution control could be carried out most effectively on a local and state level, rather low under Federal jurisdiction.

New officers of this group include: J. E. Morrison, Renton, Wash., chairman; B. C. Gosney, Auburn, Wash., vice-chairman; and W. G. Wilmot, McMinnville, Ore., board of trustees member.

Plan $10 million dam in Snoqualmie Forest

The Snohomish County Public Utility Department of Everett, Wash., last week disclosed plans for a $10,000,000 project to provide domestic water and electric power.

Plans filed with the Federal Power Commission call for a concrete dam 310 ft. high on the Sultan River five miles north of the town of Sultan, on the slope of the Cascade Mountains in the Snoqualmie National Forest.

ALSO RECORDED. . . .

Columbus, Ga., discovered it had priced itself out of the contractor-licensing market—and at the wrong end. A contractor, hailed into court for failure to procure a license, pointed to wording of a city ordinance that says,—in painfully clear language—that no license is required if the amount of the job "exceeds $500." Attorneys dropped the case to begin the rewording the ordinance to say—properly—"if the amount does not exceed" $500.

In addition to the usual peepholes at strategic points, the General Petroleum Co. has provided sidewalk superintendents with another luxury at the site of a new garage in Los Angeles. Cutaway drawings are posted near the peepholes, and a scale model—enclosed in heavy glass—is provided.

Kentucky Highway Department auditors blinked several times when they opened bids for the substructure of a new bridge over the Cumberland River at Burnside. The Massman Construction Co. bid $354,694.85, and Harry O. Wyse bid $354,695.70—just 85 cents apart.

Speed note: Just to prove it could be done, a 2-story frame house in Memphis, Tenn., was painted in five minutes and 40 seconds. It took 125 painters, a professional band and 3,500 spectators to do the job.

Residents of a Milwaukee, Wis., suburb found an effective means of protesting delays in extending sewer service to their area. They moved outhouses from the conventional inconspicuous location "out back" to the front lawns. Police could find nothing in ordinances prescribing location for such utilitarian structures.

A draftsman's error will provide the new administration building at the Toledo, Ohio, Municipal Airport with a 200 x 15 ft. observation deck. Neither Clayton L. Piper, aviation commissioner, nor R. E. Nesmith, contractor have been able to discover how the platform got onto plans for the $65,000 structure. But Piper, commenting that the city was getting "something better than called for in original plans", said the observation deck would be kept as part of the new building.

HIGHLIGHTS OF MUNICIPAL DEVELOPMENTS

Summarizing current activities in city engineering and construction throughout the country.

Planning committee formed for Baltimore metropolitan area—New York State offers aid to cities in planning sewer systems—Boston to install safety islands—Other municipal news

A Metropolitan Planning and Coordinating Committee that will work for a unified development plan for the Baltimore, Md., metropolitan area, was formally activated last week.

Sponsored by the Maryland State Planning Commission, the committee will be specifically charged with coordinating work of the city of Baltimore and the counties of Anne Arundel, Baltimore and Howard in relation to public improvements. Integration of plans for roads and roadside areas, parks, playgrounds, airport facilities, water supply, santitation and zoning are to be considered.

More than 1,200,000 persons now live in the area covered by the four governmental units.

I. Alvin Pasarew, director of the State Planning Commission, is the chairman of the new committee. Engineering representatives and department heads of the four units are members of the group.

Moving in the same direction, the city of Minneapolis, Minn., revealed plans for its 1948 improvement program said to be the largest in the city's history. Bonds totaling $8,891,000 have been authorized to cover cost of work.

The improvement program will include a start on the long-debated South Minneapolis railroad grade separation project, and the $4,000,000 project for 19 miles of 48-in. water main from the Columbia Heights reservoir north of the city to the southwest corner of the area. Other improvements include work on the city jail, paving, improvements to the general hospital, construction of a one-floor addition to the Minneapolis auditorium.

Sewer programs

New York State led developments in the sewage and sewage disposal field last week, when it was announced that state planning aid for construction of sewer systems and sewage treatment plants is now available to localities.

Assemblyman Harold C. Ostertag, chairman of the Joint Legislative Committee on Interstate Cooperation, pointed out that this form of state aid was continued by the 1948 session of the legislature as part of a drive to rid the state waterways of pollution.

The state is empowered to give aid to the extent of 2 percent of the cost of construction.

Other developments during the week included:

The Rushville, Ind., city council approved an ordinance for the construction of a sewage disposal plant to cost $460,700, as an answer to several notices from the State Pollution Control Board to cease dumping sewage into the Flatrock River.

Plans for construction of two rubbish incinerators for St. Louis, Mo., were held up because of objections from city smoke control authorities, who commented that they had not been consulted in detail about the plan. James H. Carter, city smoke commissioner, said that there is no assurance that a smokeless type of incinerator would be installed, and called attention to the city's current effort to eliminate air pollution.

At Los Angeles, Calif., the city incinerator was fired up last week in preliminary tests of safety devices. It was the first time the incinerator had been fired since an explosion wrecked the shredder and conveyor and injured five men last December (*ENR* Jan. 29, vol. p. 150). Since then, large vents have been installed on the shredder and the conveyor has been encased in heavy steel. Fans have been installed to discharge fumes.

CAPITAL SITE—World headquarters for the United Nations will rise on this site in midtown Manhattan, New York City, after wreckers have finished clearing tenements and commercial buildings from the area. The building at right will house temporary offices of the world organization until new structures are erected. A bill is now before Congress to authorize a $65,000,000 loan to the UN for construction purposes on this site.

Traffic

Pleased with the record and low cost of multi-purpose safety islands for pedestrians, protected stations for traffic lights and similar physical highway barriers, the city of Boston is planning a major program of installation of these facilities.

Philip T. Desmond, chief traffic engineer for the Boston Traffic Commission, said that 60 safety islands have been constructed to date, and the city's Public Works Department has a larger-than-usual schedule for installing new ones this year.

The concrete islands, built in conjunction with the street construction program, are considered an important factor in avoiding auto crashes, preventing drivers from cutting across opposite traffic lanes too soon or making turns across traffic. They also provide a protected spot for traffic and street lights as well as pedestrians.

Boston's announcement of further moves to build traffic safety into its streets was one of many during the week, as other municipalities tackled the same problem.

The Coffeyville, Kan., city engineer's office completed a survey and recommended that the city build a system of through boulevards and arterial streets costing about $1,500,000 to route trucks around the business district and widen existing streets. At Indianapolis, Ind., the state highway commission announced it would build a new 5-span reinforced concrete bridge, 548 ft. long and carrying a 58-ft. roadway across the White River at 16th St. The structure will replace the present Emerichsville bridge, eliminating numerous traffic bottlenecks in approaches to the older structure.

The largest portion of a $17,000,000 fund for construction in the District of Columbia, contained in an appropriation bill passed in the House last week, was earmarked for street and bridge construction in the city.

The Bardstown Road-Breckinridge Lane unit of the proposed Louisville, Ky., Inner Belt has been selected for first construction in the $30,000,000 system of super-highways, the State Highway Commission said. The first unit will be 2¼ miles long and will include a traffic circle—new to Kentucky highways—at the intersection of Taylorsville Road. The long-range plan for the Inner Belt calls for a six-to-eight-mile suburban route to meet the proposed Eastern Expressway—a super-highway for traffic heading downtown.

Parking meters entered the traffic control picture in two Ohio cities and in Philadelphia.

The city of East Liverpool, Ohio, said it would buy 475 meters which were installed six months ago on a trial basis; the city of Cleveland is acquiring land for two municipal parking lots which will be controlled by parking meters.

At Philadelphia, city officials said 625 parking meters will be placed in operation on a trial basis in the Germantown area.

New port director

John Bate last week was appointed port director for the city of San Diego, Calif., succeeding Joe Brennan, who resigned early this year after 30 years of service in the post.

The new director had the highest grade of three final applicants in a Civil Service examination for the $616-a-month appointment. He was formerly assistant port director under Brennan, and acting director between the time of Brennan's resignation and his own permanent appointment to the post.

Smoke control

Philadelphia city officials said last week that the city's smoke abatement program has been called off because of lack of funds.

The program was first formulated several months ago, and the $48,000 was listed as the sum needed to get the study and program under way. Subsequent detailed plans brought protests when it was disclosed that more than $40,000 would be used to pay salaries.

Other smoke control efforts progressed, however. At Milwaukee, Wis., John E. Brown, formerly of Cincinnati, Ohio, was named air pollution engineer to head the recently-created county smoke control department.

And at Oakland, Calif., a smoke problem endangering air operations at the city airport was temporarily solved when the Oakland Scavenger Co. agreed to check with the CAA traffic control tower before burning refuse.

Engineer problem solved

The city of Kelso, Wash., early this week believed it had solved its engineering problems—brought to a head by the resignation of its city engineer.

Under an arrangement with the Seattle engineering firm of DeWitt C. Griffin & Associates, the city will pay $346 a month to the Seattle firm, which in turn will station a junior engineer at Kelso to do the actual work of the city engineer's office. This engineer, under city instructions, will work for the engineering firm in preparing estimates for local improvement districts.

Something new in street cleaning

A "whitewash" for cleaning streets was demonstrated in New Rochelle, N. Y., last week as the latest aid in municipal sanitation. Among the watchers—some 150 members of the metropolitan chapter of The American Public Works Association—there were not a few who had heard from their wives about synthetic detergents, and their application in facilitating household tasks, but this was the first time that any of them had seen how such detergents might be applied to municipal housecleaning.

Based on experience gained in Toronto, Ont., the National Aniline Division of the Allied Chemical and Dye Corp. showed what could be done by adding 5 lb. of its synthetic organic detergent, "Nacconol" NR, to the 2,000 gal. of water in a power flusher. First, one side of an asphalt-topped street was flushed with untreated water; some dust was raised and the water quickly flowed across the surface leaving a number of oily spots unchanged.

With the detergent added, the same flusher moved down the other side of the street. This time, it spewed forth a foaming, white liquid that laid the dust, wetted the pavement uniformly, and emulsified oil spots. Furthermore, the wetted surface proved to be anti-skid in a test made with a police-patrol car.

O. M. Morgan, head of the synthetics department of the National Aniline Division, who conducted the demonstration, stated that the detergent possessed bactericidal properties and its use, therefore, minimized health hazards arising from dirty streets. The cost of adding the detergent, said Mr. Morgan, amounts to about 65 cents per mile of street flushed.

Tree trimming and root control

This meeting of the APWA, one of a series of half-day clinics in which public works equipment and techniques are studied in specific communities, was held under the general direction of Eugene Cranch, director of public works in New Rochelle.

In addition to the street-cleaning tests, there was a demonstration of tree-trimming, spraying and weed-control. Not the least spectacular item was the cutting of large limbs from standing trees using an electric-powered chain-saw operated by a man suspended in a sling.

How to control tree-root growths in sewers with copper sulphate was told by John Hood, superintendent of sewage treatment at Ridgewood, N. J. Once a year, said Mr. Hood, two pounds of the chemical is dropped in every manhole of the system, preferably at periods of low flow. Where root difficulties are encountered in house connections, the copper sulphate is added at the toilet bowl; amounts vary from 2 to 10 lb. depending on the amount of root growth. While this chemical treatment effectively destroys root growth in the sewer, it does no noticeable harm to the tree itself, concluded Mr. Hood.

Gen. Mehaffey leaves Canal Zone post

Governor to become Ohio River Division engineer—Other engineer corps assignments shifted

Major General Joseph C. Mehaffey, who has been governor of the Panama Canal Zone since May, 1944, will report to Cincinnati, Ohio, in mid-July to become Ohio River Division engineer, an Army announcement said last week.

General Mehaffey will be succeeded at Panama by Brig. Gen. Francis K. Newcomer, a 1913 West Point graduate who served during the last war as theater engineer officer in the China-Burma-India theater, and who has been engineer of maintenance since May, 1944.

Maj. Gen. Douglas L. Weart, present Ohio River Division engineer, is to become commanding general of the Engineer Center at Fort Belvoir, Va. Col. A. M. Neilson, district engineer at Huntington, W. Va., will be acting Ohio River Division engineer until Gen. Mehaffey reports for duty.

The retiring Canal Zone governor is a native of Lima, Ohio, and was graduated from West Point in 1911, being commissioned in the Corps of Engineers. He served in the Canal Zone in 1911-1912, and again in 1929, when he was assistant maintenance engineer. Other assignments have included an assignment with the Arlington Memorial Bridge Commission (1925), and service in the various district and division offices and in the office of the Chief of Engineers. He returned to the Canal Zone in September, 1941, as engineer of maintenance.

General Weart, who has been Ohio River Division engineer since November, 1946 is a native of Chicago, Ill., and graduated from West Point in 1915. His service record includes front-line assignments in both World Wars, as well as numerous assignments to district and division offices in the United States and elsewhere. During the last war he commanded rear echelon forces in the China theater.

U. S. charges monopoly in chlorinator field

A federal grand jury at Providence, R. I., recently returned a criminal indictment charging nine corporations and nine individuals with conspiracy to restrain and monopolize the production and distribution of chlorinating equipment.

The four counts of the indictment charge all defendants with conspiracy to restrain trade and to monopolize, and specifically charge the Wallace & Tiernan Co., Inc., and two other Wallace & Tiernan companies with an attempt to monopolize gas chlorinating equipment.

U. S. Attorney General Tom C. Clark said the indictment specifically accuses the defendants of buying up competitors to further the monopoly; acquiring patents and misusing them to drive out competition; preventing other chlorinating equipment manufacturers from obtaining parts and appliances; preempting the major outlets for the sale and installation of equipment; rigging specifications so as to make it impossible for competitors to bid; fixing prices, and cutting prices for the purpose of eliminating competition.

Named in the indictment were:

Wallace & Tiernan Co., Inc., Wallace & Tiernan Products, Inc., and Wallace & Tiernan Sales Corp., all of Belleville, N. J.; Builders Iron Foundry, Providence, R. I.; Novadel-Agene Corp., Belleville, N. J.; Industrial Appliance Corp., Belleville, N. J.; Fairbanks, Morse & Co., Chicago, Ill.; Schulte & Koerting Co., Philadelphia, Pa., and Hellige, Inc., with offices in Long Island City, N. Y.

The nine individuals indicated were officers of these companies.

Californians indicted for building frauds

Three Fresno, Calif., builders were indicted in Los Angeles April 22 by a Federal Grand Jury on charges of defrauding veterans in the construction and sale of units in a $500,000-housing project.

They are charged with 53 counts of conspiracy to commit offenses against the United States; wilfully building houses not in accordance with plans and specifications submitted in applications for priorities; and wilfully selling houses at more than the maximum prices fixed in the application for priorities. U. S. Attorney James M. Carter charged that the houses were sold for from $1,500 to $1,800 above ceiling prices and that serious construction defects had been discovered.

Reject temporary bridge at Agate Pass, Wash.

The Washington State Highway Department has abandoned previously announced plans to build a temporary bridge across Agate Pass, a narrow strip of salt water between Bainbridge Island and the Kitsap Peninsula west of Seattle.

Plans for construction of a permanent bridge have been approved and bids for the $1,200,000 project may be called this year. The temporary structure had been intended to span the gap until completion of the permanent bridge, and eliminate several ferry routes.

New Kernsville Dam bids rejected as too high

Because "the majority of the bids received . . . contained errors and omissions," M. F. Draemel, Pennsylvania Secretary of Forests and Waters has rejected all bids from contractors for the construction of the multi-million dollar New Kernsville impounding dam on the Schuylkill River, near Hamburg.

The dam, a part of a huge desilting project under the state's clean-stream drive, drew a low bid of $2,375,000 from Arthur A. Johnson Corp. and Mason and Hanger Company, Inc., of Long Island City, N. Y.

Civil engineering lab is set up by the Navy

The Bureau of Yards and Docks is establishing a new naval civil engineering laboratory at Solomons, Md., for basic and applied research in engineering problems and the development of amphibious equipment.

Authorized April 1, the new laboratory will begin operations as soon as facilities have been provided. It is expected to maintain a staff of 400.

Work is now underway to convert the former naval mine warfare test station into a laboratory, and barracks are being altered to provide housing and laboratory space. Construction of a new $2,000,000 laboratory building is proposed in a current appropriation bill. This building will house model studies of wave and surge action to determine the best location, shape and size of breakwaters.

The new laboratory is under the direction of Capt. Ira P. Griffin, CEC, USN, formerly public works officer of the Potomac River naval command at Washington, D. C.

Mid-west engineers resume surveying meets

After an interruption of several years, the annual Illinois Conference on Surveying and Mapping was reinstated May 7-8 at Navy Pier, Chicago. The program focussed attention upon surveying and mapping as related to local and regional planning and upon the technical and legal aspects of land surveying.

S. A. Bauer, Bauer Surveys Co, Cleveland, Ohio, in a paper entitled "The Use of Geodetic Control in Surveying Practice" emphasized that much work remains to be done to educate the surveyor in the use of geodetic control. Robert Kingery, general manager, Chicago Regional Planning Association, asserted that of the 275 muncipalities in the Chicago area only about 10 have modern and adequate maps.

D. D. Anderson, Illinois Division of Waterways, presented an historical resume of the events leading up to the construction of the Illinois-Michigan Canal and its abandonment in 1914. The canal right-of-way now will be used for Chicago's New Southwest Superhighway, L. E. Alswede, district engineer, Division of Waterways, Chicago, recited some of the difficulties of retracing the canal boundary lines, which originally were laid out 100 years ago.

Title requirements

Logan D. Fitch, assistant-vice-president, Chicago Title and Trust Co, in discussing the topic "Guaranteeing A Title" gave some of the requirements of a land description in deeds of conveyance. "In general, we are interested in having descriptions which are sufficient to constitute constructive notice to subsequent purchasers and which tie in with conveyances of adjoining property. The doctrine relating to constructive notice is very important in the title business."

Other papers were presented by Prof. G. Brooks Earnest, Case Institute of Technology, Cleveland, Ohio; William T. Laidly, U. S. Lake Survey, Detroit, Mich., and Talbert Abrams, president, Abrams Aerial Survey Corp., Lansing, Mich. Prof. J. C. Penn, Illinois Institute of Technology, Chicago, presented each of the 80 delegates with a copy of his "Suggestions and Problems for The Study of Land Surveying," a digest of topics which a professional surveyor should master.

The conference was sponsored by the civil engineering departments at the University of Illinois, Urbana, and Illinois Institute of Technology, and by the Division of Engineering Sciences, Navy Pier Branch, University of Illinois, Chicago.

Nitrates in water seen health hazard

High nitrate content in water otherwise potable may be a hazard to infants, the Conference of State Sanitary Engineers was informed during its 28th annual meeting in Washington recently.

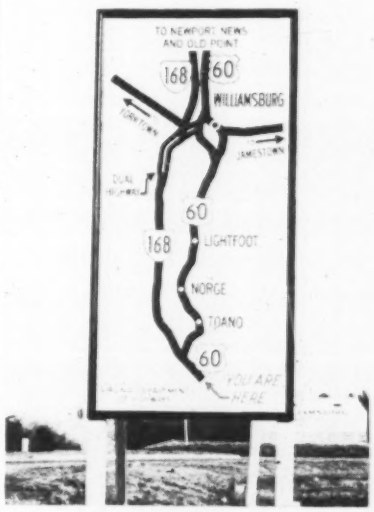
An unscheduled discussion brought out the point that there may be a relation between high nitrate content and the prevalence among infants of cyanosis, or skin discoloration resulting from certain blood changes. Two state engineers, F. H. Waring of Ohio and C. W. Klassen of Illinois, discussed the possible relationship from the standpoint of experience in their own states.

The conference endorsed the revised stream pollution control bill now being considered by the House (*ENR* May 6, vol. p. 676). Mark D. Hollis, Assistant Surgeon General, and Carl E. Schwob, sanitary engineer director, U. S. Public Health Service, explained the proposed organization of staff offices in 14 river basin areas to give technical assistance to the states in stream pollution abatement, as reported last week. (*ENR* May 13, vol. p. 691).

After discussion, the state sanitary engineers voted unanimously to continue meeting each year in the spring with the Public Health Service in Washington, instead of reverting to the former practice of scheduling fall meetings coincident with the annual conferences of the American Public Health Association.

Engineers from 42 states attended the meeting. New officers elected are: David B. Lee, Florida, chairman; W. W. Towne, South Dakato, vice-chairman; and E. W. Campbell, Maine, and C. M. Everts, Jr., Oregon, members of the executive committee, which also includes John M. Hepler, Michigan, past chairman, and H. N. Old, USPHS, secretary-treasurer.

A new water supply committee was appointed. To facilitate its work, the committee was divided into subcommittees on well construction and equipment and on recharge water.



THIS IS THE PLACE—To aid motorists the Virginia Department of Highways recently erected this enlarged map on U. S. Route 69, near Williamsburg. As an added convenience, the sign is located on a gravelled turnout area so that tourists can stop safely to study the map in detail.

Shelve reclamation plan for Arkansas work

The senate last week tabled a bill (S. 299) that would extend federal reclamation laws to Arkansas. There is little likelihood that the measure will come up again at this session.

The bill would permit the Bureau of Reclamation to build and operate projects in Arkansas under the same laws as apply to other reclamation states and was approved last May by committees of both the Senate and the House. No further Congressional action resulted until the senate took up its bill last week.

After debating the measure during parts of two days, the Senate agreed to return the bill to the calendar.

House action on its identical bill is not expected.

Canadian home building shows steady increase

The Canadian government-owned Central Mortgage and Housing Corp. last week estimated that 192,000 housing units have been completed since January, 1945. It quoted the Dominion Bureau of Statistics as saying there were about 77,000 completions last year, a gain of 10,000 over 1946.

One factor in the increased activity last year was the greater supply of building materials.

Production of eight building material items—cement, wood fibre insulating board, warm-air furnaces, electric hot water tank heaters, asphalt shingles, asphalt rolls, rock wool batts and gypsum wallboard—was more than twice as great as in 1939.

Production of two important items—steel pipe and electric hot water tank heaters—decreased from 1946. Shortage of steel was the main reason.

MEN AND JOBS

William N. Brown, president of W. N. Brown, Inc., Washington, D. C., is retiring from active survey work and will continue to give only consulting service. During 47 years in the private practice of engineering, he has specialized in precise topographic and control surveys and has made them in Alaska, Mexico, Bermuda, and nearly every state of the union, including one of more than 1,000 sq. mi. for the Mississippi River channel improvement from St. Louis to St. Paul, for the Corps of Engineers. Mr. Brown was for many years chairman of the executive committee, Surveying and Mapping Division, ASCE, and he is a charter member of the American Society of Photogrammetry and the American Congress of Surveys and Mapping.

Four former Binghamton District officials of the New York State Department of Public Works recently have been promoted. They are: **J. B. McMorran,** former associate district engineer who is now Rochester district engineer; **Edward E. Stickney,** former associate district engineer, now assistant engineer in the Albany district; **Thomas B. Rogers,** former senior civil engineer in Binghamton, now associate in the Long Island district; and **Howard C. Cook,** former senior civil engineer in Binghamton, now associate engineer in Rochester.

Newly elected officers of the Association of Highway Officials of the North Atlantic States are, left to right, A. Lee Grover of the New Jersey highway department, secretary-treasurer; John C. Burnham of Maine, vice-president and Wm. F. Childs, Jr., chief engineer of the Maryland department of public works, president. At the right is W. B. McKendrick, of Delaware, retiring president.

C. E. Andrew, center, chairman of the board of consulting engineers, Washington State Toll Bridge Authority, checks engineering drawings for the Tacoma Narrows Bridge with Bethlehem Pacific Coast Steel Co. engineers, E. F. Gohl (left), and M. H. Frincke (right). Frincke will be on the job to supervise construction on Bethlehem's $8,500,000 contract which includes erection of two 500-ft. towers, main supports for the 2,800-ft. span. Bethlehem will fabricate and erect over 18,000 tons of steel for the job.

Harold E. Aldrich, an employee of the Bureau of Reclamation since 1939, has been designated acting district engineer of the Upper Missouri District. A civil engineering graduate of the University of Nebraska, he was employed by the Nebraska State Highway Department and the Army Corps of Engineers at Rock Island, Ill., before becoming associated with the Bureau of Reclamation. His first assignment with the bureau was in the canal division of the Office of the Chief Engineer in Denver, Colo. In November, 1944, he was transferred to Washington, D. C., where he served as assistant liaison representative for the Commissioner of Reclamation, until May, 1946, when he went to Billings, Mont., as assistant to the supervisor of Region 6's Missouri Basin Project Development Staff.

Brig. Gen. Lewis A. Pick of the Army Engineers, has been advanced to the rank of major general. Maj. Gen. Pick is division engineer of the Missouri River valley division, with headquarters at Omaha.

Robert Dahms, engineer of Cass County, Minn. has resigned.

Roscoe Brady has become engineer of Monroe County, Iowa.

George D. Rock, a graduate of Catholic University's school of engineering, was recently named dean of the Washington, D. C., University's graduate school of arts and sciences.

William P. Curlin, former assistant highway engineer at Ashland, Ky., has been appointed deputy highway commissioner. He joined the department in 1925 and was named assistant highway engineer at Ashland in 1936. He held the post until 1942 when he resigned to join the U. S. Engineers Corps with whom he served in the South Atlantic Division. He returned to the department last year.

James E. Hartness has been employed as assistant engineer for Shelby County, Tenn., to be engaged chiefly on the 900 miles of asphalt-surfaced county roads. For 11 years he was

with the Illinois highway department, and later was assistant division engineer at Danville, Ill., with the Chicago & Eastern Illinois R.R., and with the Bird-White Construction Co. in Memphis.

J. W. Pumphrey has been apponed chief of the engineering division, Memphis, Tenn., district of the Corps of Engineers, succeeding C. E. Huffstetter, retired. He is a civil engineering graduate of Lehigh University, and has been employed in the Memphis Engineer District since 1931.

Leslie J. Shearer has been appointed administrative assistant to the city public works commissioner in Rochester, N. Y., a newly-created position.

DeWitt L. Pyburn, former director of public works in Louisiana, has been appointed a member of the Mississippi River Commission. An expert in flood control work, he succeeds the late H. N. Pharr.

A. G. Mackay has been named chief engineer for MacDonald Construction Co., Ltd., Halifax, N. S., and **E. C. O'Leary** has been appointed general superintendent for Nova Scotia Construction Co., Ltd., also of Halifax.

Col. Earl P. Houston, who has been associated with the United States Engineers since 1927, has been appointed project engineer of the Memphis Harbor (Tennessee Chute) Project. He assumed his new duties when he was relieved from active duty with the Third Army on March 6.

Colonel Houston is well known in Mid South engineering circles. He has been construction inspector, supervisor, associate engineer and construction superintendent of various projects.

James Krueger, civil engineer of Seattle, Wash., has been appointed city engineer of Pasco, Wash., on a trial basis. He will supervise the street and water departments and the building inspector's office.

Peter A. Wadsworth, District Four engineer for the State Road Commission of West Virginia, has resigned to become general manager of the Greer Limestone Co., Greer, W Va. He joined the commission at Clarksburg as an engineer December, 1933, and has served continuously since. He was promoted to district engineer about a year ago, after having served for several years as area supervisor.

Recently appointed heads of the Ohio Department of Highways are: Earl L. Reeb, director (left), and Frank M. Williams, assistant director and chief engineer (right). Reeb, a graduate of Ohio Northern University, has been with the department 18 years, ever since his graduation from Akron University in 1930.

D. J. Emrey, engineer of Waterloo County,, Ont., is the new president of the Ontario Good Roads Association, succeeding W. J. Moore of Renfrew.

W. S. McKay, left, on behalf of the Ontario Good Roads Association presents a certificate of life membership in the association to Norman W. McLeod in recognition of his work on airport and highway design.

George Griffiths, (right) construction superintendent, Nichols Engineering and Research Corp., New York City, points out to E. J. Kilcawley, professor of sanitary engineering and soil mechanics, Rensselaer Polytechnic Institute, some of the features of the 250-ton incinerator being built for Troy, N. Y.

The first road show of highway and airport building equipment since 1940 will be held at Soldier Field, Chicago, July 16-24. J. T. Callaway (left), president of the American Road Builders' Association, is shown discussing the ground plans with Martin H. Kennelly, mayor of Chicago. More than 1,250,000 sq. ft. of display space will be utilized. The 45th annual ARBA convention will be held concurrently in Chicago.

Illinois, Iowa push new state institutions

Illinois, through its Department of Public Works and Buildings, is rapidly pushing to completion a $98,000,000 building program at numerous state institutions.

Funds are ear-marked for non-profit hospitals, airports, and housing projects. The University of Illinois has been allocated all but $1,918,000 of its $12,995,000 building fund, most of this going towards the construction of the new chemistry, electrical and mechanical engineering buildings, two major additions to the state natural resources building, and a women's dormitory.

Among other new structures planned are a 450-bed ward building at Chicago State Hospital, a nursery ward at Dixon State Hospital, and a dormitory at Sheridan School for Boys. In all, 131 building projects including both new construction and modernization are under way at state welfare, educational and correctional institutions.

Iowa program

An Iowa legislative interim committee has authorized two state boards to proceed with three institutional buildings expected to cost $1,560,000. Included is a $289,900 contract to Lippert Bros., Boone, Iowa for a 96-employee residence building at the Clarinda State Insane Hospital. Erection of similar employee-residence buildings at the state's three other insane hospitals will follow.

The committee also authorized the State Board of Control, which operates the hospitals, to draw up plans and specifications for a new three-story building at the Mt. Pleasant Hospital for the Insane, to cost about $926,080,

New road to be cut into Calif. mountainside

A contract for a difficult grading project in northern California has been awarded to Piombo Construction Co. and M & K Corp., San Francisco, the California Department of Public Works has announced.

The $858,862 contract requires that a new road be benched from the mountainside above the existing road, starting at grade and reaching a grade of some 50 ft. above the present roadway. The daylight cuts of this realignment start at varying heights up to 200 ft. above the grade of the present highway and all are in solid rock. In some cases a rock slab 60 to 100 ft. high and approximately 10 ft. thick has to be peeled off the side of the mountain.

FOR SHEET STEEL PROCESSING—Kaiser-Frazer Corp. plans to begin operations in these two extensions to its Indianapolis, Ind., steel rolling mill this month. The extensions are part of an enlargement and modernization program which includes a normalizing furnace for processing of sheet steel of deep drawing quality. General contractor is H. D. Tousley, Inc., Indianapolis.

Vote fund to fireproof White House

Congress added $50,000 to the First Deficiency Appropriation Act (Public Law 519), recently signed by the President, to pay the cost of making the White House more nearly fireproof.

Commissioner W. E. Reynolds of the Public Buildings Administration asked for the money, with good engineering opinion to back up his request before an appropriations subcommittee of the Senate.

One report he offered said: "The building . . . presents a definite fire hazard to persons and property." The report recommended replacing the present second floor with fire resistant construction. This is the only floor in the White House that has remained untouched since 1815-17, when the executive mansion was rebuilt after its destruction in the War of 1812.

The report represented the joint judgment of three men whom the President had appointed to examine the White House from a structural standpoint: Commissioner Reynolds; Richard E. Dougherty, president of the American Society of Civil Engineers, and Douglas W. Orr, president of the American Institute of Architects. They said the second floor of the structure is inadequate as well as a fire hazard.

Engineering specialists of PBA said much the same in a separate report. Timber framing of the second floor is very dry, and sections and holes have been cut in the supporting beams for pipes and wiring. Commissioner Reynolds said timbers supporting the President's study were overstressed under dead load alone; others over the main floor dining room were stressed ten times normal. As a result of the investigations, use of the second floor has been restricted.

Even more dangerous are the fire hazards. A 5-man committee of the National Fire Protection Association which inspected the White House at Commissioner Reynold's request, reported that national concern over the hazards was "absolutely justified."

"White House exit facilities are not adequate to insure safety under emergency conditions," said A. C. Hudson, of Concord, N. H., chairman of the NFPA committee on libraries, museums and historic buildings. "We are particularly concerned with the open stairways which are the only means of exit from the upper floors."

About six months would be required to rebuild the second floor, Commissioner Reynolds has estimated. The President's family would have to move to another residence during that time.

THE COVER PICTURE

Sixteen of these 125-ft. long steel girders will go into a new highway bridge across the Sacramento River near Redding, Calif. Each of the girders is 8 ft. deep and weighs 54 tons, and was transported to the site on specially adapted trucks and trailers.

Fredrickson Bros., Emeryville, Calif., is contractor on the work.

Block planned $84 million TVA plant

The Tennessee Valley Authority has received a setback to its plans for building another steam plant. The House of Representatives backed its Appropriations Committee by approving a recommendation to strike out the administration's request for $4,000,000 to start construction of an $84,000,000 steam generating station at New Johnsonville, Tenn.

The request had been included in the Government Corporations Bill (H. R. 6481).

A $15,142,000 request in the same bill for continued construction of Watauga and South Holston dams was approved by the committee. These projects, the committee said, are entirely justified by the TVA law.

In its report, the Appropriations Committee said that authorization of the steam plant would set a precedent for "unlimited future expansion of electric generating facilities by TVA by means of steam plants or other methods having nothing to do with navigation or flood control." Minority members of the committee predicted an effort would be made on the floor of the House to restore the item.

A caustic minority report asked if the private power companies would urge Congress "to say that here in the Tennessee Valley alone the ceiling on development has been reached." The minority pointed out that TVA has taken over steam plants built by others and has constructed one such plant, authorized by Congress in 1940, at Watts Bar to supply power to the Oak Ridge atomic energy installation.

The new steam plant is needed to firm up TVA hydro power in dry months, the minority reported. It would be poor business judgment on the part of the government, the minority contended, to leave TVA in a position where it might have to sell a large amount of secondary power to private power companies at "dump rates."

Harcourt A. Morgan, 80-year old vice-chairman of the TVA board of directors, has resigned from the 3-man board. President Truman has appointed to replace him Harry A. Curtis, 64, dean of the College of Engineering, University of Missouri.

Curtis was chief chemical engineer of TVA from 1933 to 1938. His confirmation by the Senate is certain.

High fire detection record reported

Automatic fire detection and alarm systems in government wartime installations came close to giving 100 percent satisfaction. Not a single case of failure to detect fire has been reported to the committee on signaling systems and thermostats of the National Fire Protection Association.

In its report last week to the 52nd annual meeting of the NFPA in Washington, the committee pointed out that the wartime installations made this record, even though they were substandard and were maintained by inexperienced personnel. Despite these deficiencies, government agencies have reported satisfaction and no detection failures with systems installed in various types of buildings, including warehouses, commercial centers, dormitories and schools.

In line with its principal purposes of developing technical standards and disseminating information, NFPA took up a number of code revisions and organized a new electrical section. Percy Bugbee, general manager, said association's chief worries are ignorance or indifference which are responsible for the vast majority of fire tragedies. He cited the recently-reported fire hazard in the White House as an example of this indifference.

Analyzing last year's 202 large loss fires, he said the fires accounted for 30 percent of the money-loss for the year and took 897 lives. Looking behind the fires, he reported these factors in the 202 cases: 105, delayed detection; 164, inadequate public or private fire protection; 112, substandard construction; 84, division walls lacking; 79, unprotected vertical openings.

A model statute permitting adoption of codes by reference will be presented to state legislatures in 1949, Maj. Gen. Philip B. Fleming told the meeting in the course of reporting progress of the President's conference on fire prevention, which he heads as general chairman. A number of national organizations are behind the statute.

Several committees recommended important code changes. One of these called for abolition of the use of public exit halls as air conditioning plenum chambers in hotels, hospitals, institutions and multi-family houses. A second recommended that in buildings, especially of windowless type, where the panic hazard is pronounced, means be provided for removing smoke mechanically. Another proposed a performance requirement for the protection of moving stairways by the sprinkler-vent method.

New taxes to pay for Minn. road improvements

Increased mileage and improvements to Minnesota county road systems, to be paid for primarily by heavier motor vehicle registration fees, have been voted by the state's Legislative Interim Commission on Highways.

A gas-tax amendment to the state constitution, which goes to the voters in November, would split gasoline tax revenues equally between the state and the counties, instead of giving the counties only a third as at present.

The commission agreed on two primary sources for the additional revenue required. One is a general upward revision of motor vehicle registration fees aimed at adding about $6,000,000 annually to highway funds. The other is a one-cent increase in the gas tax.

Recommendations call for a review of present highway systems. The county primary systems will correspond to the present state aid system and county secondary systems to present county aid roads.

In addition to the integration of county road systems to comprise a connecting network of roads, the commission recognized urban needs, and held that any long-range plan must include provision for a replanning of the urban trunk system to provide adequate terminal and distribution facilities.

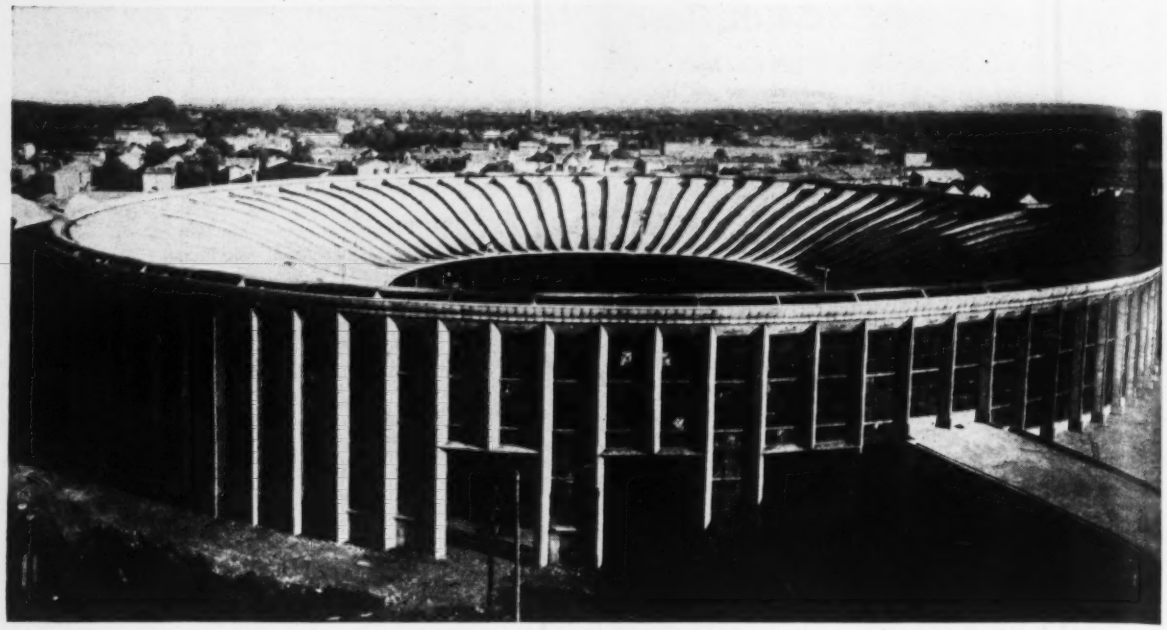
Philadelphia to spend $50 million on works

Philadelphia, Pa., voters last week had approved loans totaling more than $50,000,000 to finance city improvements.

Of the total, $11,750,000 will be used for building and improving garages, parking lots, parks, playgrounds, recreation centers, roads, streets and bridges, additions to the Zoological Gardens, Municipal Stadium, Commercial Museum and Convention Hall, the Home for the Indigent, libraries and fire houses.

Some $14,100,000 in a second bond issue is designated for street and bridge improvements as part of joint city-state projects, and for equipping 20 playgrounds and recreation sites, and provides for hospital and street light improvements.

A third proposal authorizes the city to borrow $24,675,000, with $17,000,000 to go for completion of the Market St. Subway "high speed line" to 46th St. It also will provide new health centers, a new juvenile detention home and flood control work—the latter including the Frankford Creek project.



Circular engine houses of reinforced concrete are included in the rebuilding of the French National Railways.

Thin-shell concrete roofs for French roundhouses

Spanning 75 ft. 6 in., a curved, reinforced concrete slab only 3¼ in. thick forms the roof of a circular engine house at Bethune, France.

The shell is stiffened radially by hollow ribs, which also serve as ducts to convey smoke outside the building, and is supported on three concentric rings of concrete columns.

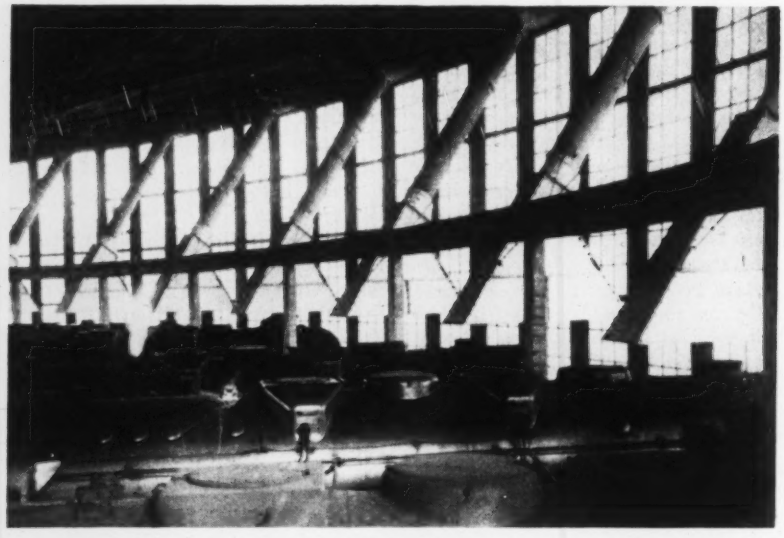
Leaving the central area exposed, the cast-in-place roof covers a circular strip about 115 ft. wide. In plan, the inner radius is 122 ft., and the outer 236 ft. 4 in. The columns are spaced on the inner circumference 14 ft. 6 in. apart to provide clearance for each of the 48 tracks radiating from the central turntable.

The center row of columns is 34 ft. from the inner ring and 75 ft. 6 in. from the outer row. Reinforced concrete tie-beams, 14½ in. wide by 10 in. deep, extend beneath the ducts between the tops of the center and outer columns.

The exterior columns, precast on the site, have a V-shape section to permit an estimated saving of 60 percent in reinforcing steel. Between these 8-ton members are windows that extend from near the ground to the cornice.

A 46-ft. wide craneway for a one-ton crane is provided between the center and outer columns. The rails are carried 23 ft. above the floor on concrete T-beams, spanning between the center columns and between an extra ring of concrete posts.

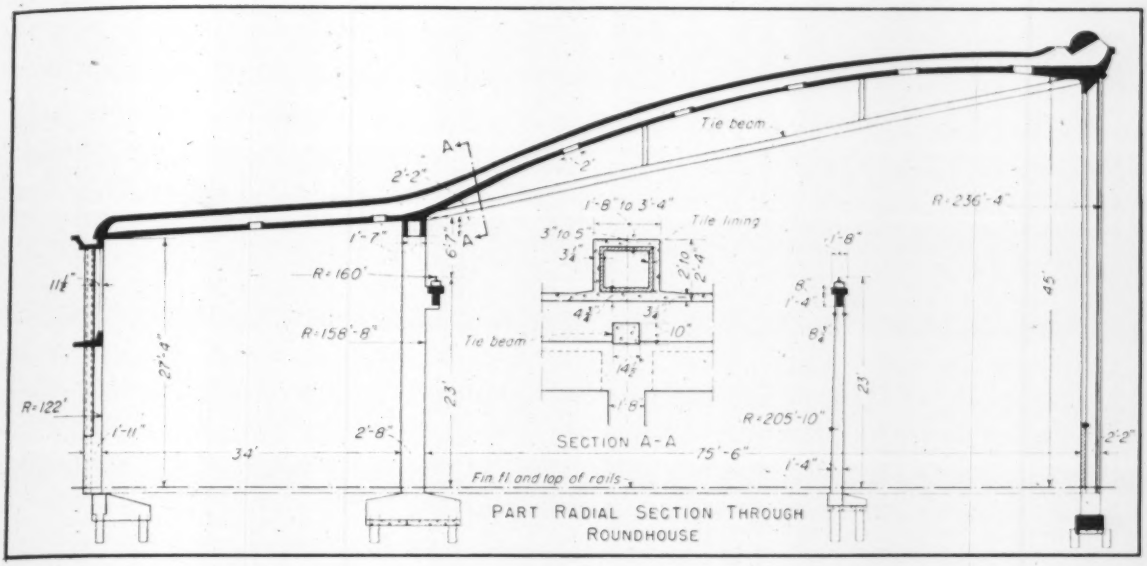
At the tops of the main columns are circumferential concrete beams that carry the roof slab. Shaped like an ogee curve, the shell is 27 ft. 4 in. above the floor at the inner edge, 29 ft. 7 in. above at the center columns, and 45 ft. at the outer edge. It is 3¼ in. thick between the center and outer beams, except for a 10-ft. wide strip near the former, where it is deepened to 4¾ in. Between the inner and center columns, it is 4½ in. thick. Reinforcement consists mainly of ¼-in. radial rounds, 6 in. c. to c., and ⅝-in. dia. circumferential bars about 7 in. c. to c.



Asbestos-cement hoods for capturing smoke from locomotive stacks are the chief means of ventilating the roundhouses.

Smoke expelled through ducts

Special attention was given to evacuation of smoke. The principal means used are asbestos-cement hoods that capture the fumes as they leave the locomotive stacks and ducts that conduct the smoke to the cornice of the exterior facade, where they are discharged to the atmosphere. The shape of the static deflector and two exits at



A vertical radial section taken through a hollow rib showing the three rings of columns supporting the thin-shell concrete roof. Openings in the roof permit evacuation of smoke through the ribs.

each discharge end were designed with the aid of wind tunnel tests to obtain optimum aspiration and dispersion.

Smoke that escapes the hoods is removed through the tile-lined hollow roof ribs that also lead to the cornice discharge. Of varying cross section and about 9 ft. 6 in. apart at the cornice, these ducts pick up the fumes through 1-ft. 6-in. by 2-ft. elliptical holes in the roof slab.

Built by Edward Coignet of Paris, this roundhouse is one of several for which a standardized design is being used by the French National Railways. The general program, which contemplates rebuilding 2,000,000 sq.ft. of engine houses, was worked out by Robert Levi, technical chief of the railways' fixed installations, and by Paul Peirani, chief of the building division and principal designer of the roundhouses. Concrete calculations were by Bernard Laffaille.

Flood district sues contractor for $1,236,000

A long-expected lawsuit for $1,236,000 against the Donald R. Warren Co., Los Angeles, engineering firm, was filed this month by the Ventura County flood control district. Involved in the suit is the designing and engineering of Matilija Dam by the Warren firm. Although the dam's contractors withdrew several months ago, approval for storage of water except small amounts for test purposes, has not yet been granted by the California Department of Public Works, division of dams.

The legal action, alleging breach of contract, lists three main counts for which damages are sought. They are that The Warren Co. failed to conduct foundation explorations at the damsite; caused concrete to be poured upon inadequate foundation material; and redesigned the dam as the project proceeded.

Among the various items was $250,000 for grouting and bentonite treatment now under way. It is expected that further excavation under some sections of the dam may be necessary.

The Warren company was first hired by the district in December, 1945. It was asked to resign from its duties in connection with Matilija Dam last February. Warren's original estimate for costs of the dam was $700,000, but to date about $2,500,000 has been spent.

A final settlement with the contractors, Atkinson Keir Bressi and Beranda, was reached early this year on payment by the district of $246,952, bringing the total paid the contractors to $2,136,583.

The original construction contract had been for $1,279,954. Various requests for adjustments on the contract were submitted to the district by the contractors on claims that the Warren specifications fell short of materials required.

Matilija Dam is part of a project which includes another dam and a connecting tunnel for which the flood control district voted $3,500,000. A suit was filed by the Warren company recently to collect $77,000 for plans on the companion dam (Casitas) but this was dismissed by the court without prejudice.

Thomas Bailey, Charles P. Berkey and A. W. Simonds have acted as consulting engineers for the district to determine what steps are necessary to make the dam acceptable to the state. Walter Loban is resident engineer and Robert Ryan, county flood control engineer.

Shasta reservoir overflows while rains end drought

Melting snow recently has filled Shasta Reservoir to a record height, forcing Bureau of Reclamation officials to spill some 8,000 sec. ft. beyond that usable for irrigation and power generation for a two-day period.

Release of the excess water was necessary to maintain the dam's flood control function, its primary purpose, as heavy storms on northern California watersheds could cause the Sacramento River to overflow its banks.

Water storage behind the dam reached 3,584,000 ac. ft., leaving only about 150,000 ac. ft. of storage space in the 3,700,000-ac. ft. reservoir.

Heavy spring rains have alleviated the drought crisis in northern California to a great degree, permitting the removal of compulsory power rationing.

In lifting the controls, however, Robert P. O'Brien, emergency power director, emphasized the necessity for continued voluntary conservation of power.

Restrictions still remained on new industrial loads in the northern and central portions of California. All new companies needing more than 100 kw. must apply to the power division of the Public Utilities Commission.

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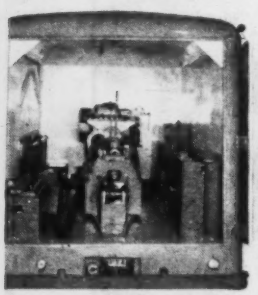
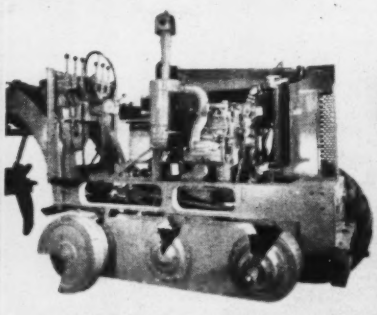
Interior view of one of the Educational Trucks.



Cut-away of controls, engine and driving wheels of Model A-D Motor Grader.



Classroom views of mechanic's school at Springfield, Ill.

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BETTER ROADS FOR A BETTER WORLD
45th Annual Convention and Road Show
SOLDIER FIELD CHICAGO
JULY 16-24, 1948

ENGINEERING SCHOOL NEWS

Reclamation bureau seeks engineering students—Research programs—M.I.T. library starts—Prof. C. L. Mann, North Carolina, retires after 49 years.

Jobs for students—

Wallace C. Sharples, regional employment officer for the Bureau of Reclamation, recently visited four Pacific Northwest colleges as the first step in a campaign to recruit between 350 to 400 engineering students for full or summertime employment on reclamation projects. Colleges visited were the University of Idaho, Washington State College, Gonzaga University and Oregon State College. Other schools will be visited later. The bureau is undertaking an engineer trainee program, through which students in their sophomore and junior years may be employed during the summer months, given on-the-job training, and upon graduation go right into professional engineering positions. A nation-wide examination for permanent appointment to the position of engineering trainee in the bureau, at salaries from $2,200 to $3,400, probably will be announced soon.

Soil mechanics—

Prof. E. J. Kilcawley, head of the division of soil mechanics and sanitary engineering at Rensselaer Polytechnic Institute, has announced a list of consultants who will aid the committee in research in the field of soil mechanics. They are: Roland F. Beers, president of the Geotechnical Corp., Troy, N. Y.; Ralph E. Grim, head of the division of clay resources and clay mineral technology, University of Illinois; Roger P. Humbert, soil scientist of the Saratoga Laboratories, Saratoga, N. Y.; David J. Varnes of the U. S. Geological Survey, Denver, Colo.; Douglas McHenry of the Department of Interior, Denver; E. Raymond Shepard, Office of the Chief of Engineers, War Department, Washington, D. C.; W. J. Turnbull, chief of the soil division, Mississippi River Commission, Vicksburg, Miss.; and Donald J. Belcher, associate professor of civil engineering, Cornell University.

M.I.T. library—

A memorial library, made possible by a gift of $2,200,000 from a fund established by the late Charles Hayden, class of 1890, was started April 5, at Massachusetts Institute of Technology. The new structure will have stack capacity for more than 300,000 books, making the institute's total library facilities approximately 1,000,000 volumes. The building was designed by Voorhees, Walker, Foley, and Smith, New York, and construction will be by Thompson-Starrett Co., New York. John E. Burchard, is director of libraries for the institute.

Research programs—

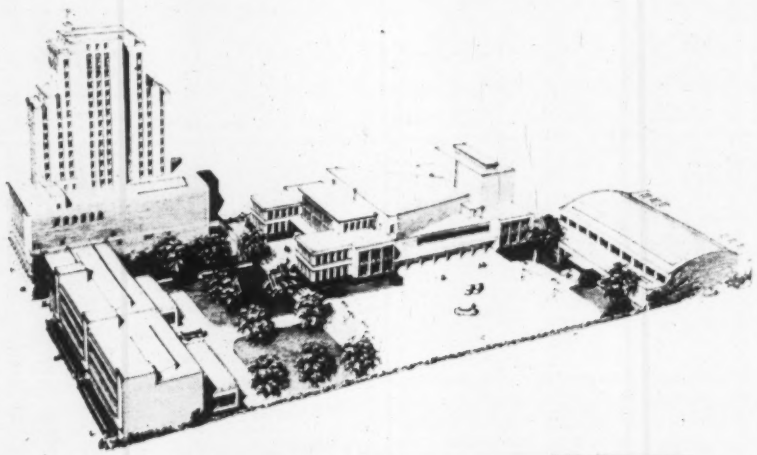
The University of Florida is planning a training program for personnel of the state road department to start in May. A study of sewage treatment processes has been going on for about a year and a study of methods of stabilization of muck is now in progress. C. D. Williams, head professor of civil engineering, says that a research program has been developed to include many projects of particular concern to the state. Further development of the engineering college will take place with the proposed new engineering building.

Under a special research project approved by the board of regents, the University of Idaho will seek better methods of forecasting runoff and floods on the multi-purpose projects now developing on the state's rivers. The civil and agricultural engineering departments will work on the project in cooperation with the school of forestry, according to Allen S. Janssen, dean of the College of Engineering. The Bureau of Reclamation, Army Engineers, Weather Bureau, Soil Conservation Service and two power companies also will cooperate.

"Hydroelectric developments, navigation improvements and irrigation projects would benefit directly from improved methods of forecasting," Janssen said. The project will seek to provide information for the further development and use of high-altitude precipitation gauges by tests and installations at nearby mountain sites.

Forty-nine years' service—

Carroll L. Mann, head of the civil engineering department at N. C. State College, Raleigh, N. C., has announced his retirement, effective June 30, after having served on the faculty for 49 years. Professor Mann joined the faculty in 1899 and has remained all of the time since except for a few months as assistant engineer with the Isthmian Canal Commission in Nicaragua and as assistant engineer with the Seaboard Air Line Railway. He was appointed dean in 1916, and in recognition of his achievements for the advancement of civil engineering in North Carolina and the South recently was awarded a life membership in the American Society of Civil Engineers.



FENN COLLEGE DEVELOPMENT—Above is the development plan by Charles Bacon Rowley & Associates, Inc., for Fenn College, Cleveland, Ohio. A contract for one of the structures—a new mechanical engineering building—has been awarded to the Albert M. Higley Construction Co. of Cleveland. The amount, exclusive of equipment and architects' fees, is $445,000. The structure, 100 ft. by 99 ft., will be three stories high and of steel and concrete slab construction, with an exterior of brick and Indiana limestone. Dean Shelton M. Spears, of the school of engineering, says the building will provide for 372 students, its 350,000 cu. ft. to be divided into eight classrooms, two engineering drawing rooms, a production laboratory, tool and locker rooms and two offices.

OBITUARY

Col. James H. M. Andrews, 72, retired vice-president in charge of engineering for the Philadelphia Transportation Co., died in Philadelphia, Pa., recently. He was a graduate of Pennsylvania State College and for 30 years was on its board of trustees. He joined the traction company as a draftsman in 1903, becoming vice-president in 1942. During World War I he was a colonel with the 103rd Engineers, and during the last war was in charge of emergency civilian defense work in Philadelphia and four surrounding counties.

George W. Gilbert, 56, Avalon, N. J., a retired structural engineer, died May 5 at Sea Isle City.

Thomas D. Searl, 69, who retired in 1947 as chief engineer for the George A. Fuller Construction Co., New York, died at New Dorp, N. Y., May 10. Mr. Searl began with the Fuller company 45 years ago upon graduation from Cooper Union.

Zepherin Lambert, 62, civil engineer and assistant co-ordinator for Quebec and the maritime provinces in the public projects branch of the Canadian department of Reconstruction and Supply, died at Ottawa, Ont., May 6. He was a 1913 civil engineer graduate of the University of Montreal. He had been city engineer and manager of Three Rivers, Que., and chief construction engineer of Sorel Marine Industries.

Walter F. Anderson, 73, engineer with the municipal architect's office of the District of Columbia, died May 8 in Washington, D. C. After attending Columbia University, he joined the New York firm of Grosvenor Atterbury, where he was general office manager and superintendent of construction from 1905 to 1932. Mr. Anderson went to Washington in 1943 and was an industrial analyst with the War Production Board for a year until he transferred to the municipal architect's office.

Capt. Roland Murden, 50, with the U. S. Army Engineers for 32 years and identified with the Inland Waterway in Virginia and North Carolina, died at Durham, N. C., May 9.

Thomas F. Keydon, 65, resident engineer of the Nova Scotia highways department died at Halifax recently.

John Edelstein, 60, civil engineer in charge of state highways in northern Westchester County, N. Y., with headquarters at Katonah, died in White Plains, May 16. He was a graduate of New York University, 1916, and joined the state highway department in 1923.

Work on a 2-mile tunnel in B.C. to start in June

Construction of a tunnel more than two miles long for the British Columbia Power Commission's $4,500,000-Whatshan-Arrow Lakes hydro project will be undertaken early in June by a Vancouver, B. C., firm, Miners Western Ltd., a subsidiary of Miners Inc., of Noranda, Que.

Contract for the job was awarded to Miners Western on a bid of $1,236,997.86, the lowest of four bids.

The tunnel, main engineering feat of the project, will connect a dam at Whatshan Lake with the powerhouse near Needles, on the Arrow Lakes. Two 12,500-hp. generating units are projected for the scheme.

Specifications on the tunnel job call for 10,300 ft. of main tunnel, 12-ft. dia., a 560-ft. drop shaft, 12-ft. dia.; to a 250-ft. adit tunnel, 12-ft. dia.; 260-ft. surge shaft, 16-ft. dia.; and an 1,100-ft. lower outlet tunnel to the powerhouse, with 460 ft. of 10-ft. dia. and the rest 11 ft.

Superintendent in charge of the tunnel project will be John Scott. Equipment is already on its way from eastern Canada, and work started on the camp in mid-May. Tunnel construction will take about 22 months.

MAJOR MEETINGS

Society for Experimental Stress Analysis, The Roosevelt Hotel, Pittsburgh, Pa., May 27-29.

Engineering Institute of Canada, 62nd annual meeting, Banff Springs Hotel, Alberta, June 1-5.

National Conference of Community Planning, annual meeting, Banff Springs Hotel, Banff, Alta., June 2-5.

American Society for Engineering Education, 56th annual meeting, University of Texas, Austin, Tex., June 14-18.

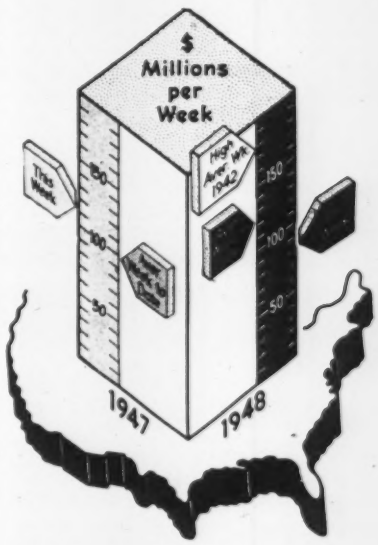
National Association of County Officials, Annual conference, Hotel George Washington, Jacksonville, Fla., June 21-23.

American Society for Testing Materials, annual meeting, Hotel Book-Cadillac, Detroit, Mich., June 21-25.

American Road Builders Show, Soldier Field, Chicago, Ill., July 16-24.

American Society of Civil Engineers, Annual convention, Hotel Olympic, Seattle, Wash., July 21-23.

CONSTRUCTION ACTIVITY



As Reported this week to . . .
Engineering News-Record

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of May 20 1948	Cumulative 1948 (21 wks.)	Cumulative 1947 (21 wks.)
Federal	$9,966	$449,162	$220,361
State & Mun.	55,015	903,945	612,614
Total Public.	$64,981	$1,353,107	$832,975
Total Private	17,747	1,194,027	1,251,489
U. S. Total.	**$82,728**	**$2,547,134**	**$2,084,464**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Dollar Volume (Thousands)

Type of Work	This Week	Cumulative 1948 (21 wks.)	Cumulative 1947 (21 wks.)
Waterworks ...	$2,465	$66,488	$48,603
Sewerage	4,542	83,806	43,412
Bridges	3,761	110,006	62,135
Highways	24,627	358,149	277,269
Earthwork, Waterways	8,314	230,155	103,403
Buildings, Public	18,254	417,906	203,101
Industrial ...	5,133	374,314	326,627
Commercial .	11,043	728,025	732,423
Unclassified ...	4,649	172,285	287,491

NOTE: Minimum size projects included are: Waterworks and waterway projects $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1948 (21 wks.)	Cumulative 1947 (21 wks.)
NON-FEDERAL ...	$1,457,271	$648,807
Corporate Securities	796,772	215,244
State and Mnuicipal	660,499	433,563
**Total Capital ..... **	**$1,457,271**	**$648,807**

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	May'48	447.86	215.27
Building Cost	May'48	333.93	180.51
Volume	April'48	302	132

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *E. R. BIGGERSTAFF, M. R. ROESSLER, Statistics*

WATER SUPPLY

Construction Reports received since this section went to press will be found in Last Minute Construction Reports.

BIDS ASKED

Bids Asked May 24

Md., Towson—Baltimore Co. Comn., Courthouse, approx. 6,612 lin. ft. 6- to 12-in. watermains, 2,645 lin. ft. 8- to 12-in. sewers, valves, hydrants, manholes, etc. in 1st, 2nd, 4th, 8th, 9th, 11th, 12th, 13th, 14th, and 15th Dists., contr. 128 S & W. Plans deposit $15. Wm. F. Neale, Towson, ch. engr.

Bids Asked May 25

Ind., East Chicago — Bd. Water Works Trustees, J. H. Freeman, Fife, pres., 4733 Wentworth Ave., 1½ m. g. elevated steel storage water tank, etc. $400,000. Plans deposit $25. Leo Beszzzi, 314 Hammond Bldg., Hammond, consult. engr. CD 4/29—ENR 6/13.

Ont., Windsor—S. H. Gillett, secy. Windsor Utilities Comn., 607 Canada Bldg., 5½ m.g. rein.-con., reservoir, incl. 4,500 cu. yd. concrete, 240 tons steel. About $150,000. Plans deposit $25. Gore & Storrie, 1130 Bay St., Toronto, engrs. CD 10/9—ENR 10/30.

Bids Asked May 26

Minn., Anoka — State Dpt. Administration, P. T. Peterson, dir. Purchases, 19 State Capitol, St. Paul, installing, addns. and changes in water distr. lines, at Anoka State Hospital, $50,000. Plans deposit $15. R. D. Thomas & Assoc., 400 Metropolitan Life Bldg., Minneapolis, engrs. CD 6/4/46—ENR 6/6/46.

Pa., Morrisville—Morrisville Boro Municipal Auth., WW imprvs. $276,210. Albright & Friel, Inc., 152 Walnut St., Phila., engr. Harry H. Lee, 635 N. Delmorr Ave., boro engr. CD 3/18—ENR 3/25, under LB.

Bids Asked May 28

Neb., Daykin—City, imprv. WW sys. $44,000. Harold Hoskins & Assoc., Terminal Bldg., Lincoln, engrs.

Bids Asked May 31

Tenn., Pulaski—Bd. of Mayor and Aldermen for Town, at office Hon. Erskine Sharp, mayor, water sys. addns. Plans deposit $75. Howard, Hickerson & Jordan, Inc., 304½ Third Ave. N., Nashville, engr. and archt. CD 10/2/46—ENR 10/17/46.

Bids Asked June 1

Miss., Brookhaven—City, c/o H. B. Lilly, clk., furnishing, installing one 350 GPM motor driven service pump and one integrating, totalizing main line water meter ranging from 75 GPM to 600 GPM. CD 6/30—ENR 7/24.

Bids Asked June 3

†**Calif., San Bruno** — U. S. Eng., 74 New Montgomery St., San Francisco, drilling, testing 1 water well, Golden Gate National Cemetery, Spec. 2910, Serial 04-203-48-201.

Bids Asked June 8

O., Bucyrus—At office Director Pub. Service, Municipal Bldg., City Hall, 2.5 m.g.d. water softening plant of lime soda-ash type and high service pumping station, Contr. 6. Plans deposit $15. Floyd G. Browne & Assoc., 196 S. Main St., Marion, engrs. CD 3/17—ENR 3/25.

Wash., Monroe—State Dpt. Pub. Institutions, Olympia, 6,000 ft. 10 in. transite, steel water supply line, and 300,000 gal. steel reservoir at Western State Reformatory. $65,000. Plans deposit $25. A. T. Kane, 304 Lowman Bldg., Seattle 4, Wash., engr. CD 6/30/47—ENR 7/24/47.

Bids Asked June 15

†**Virgin Islands** — Rufe B. Newman, Jr. deputy comr. for Construction, Bureau Community Facilities, Pub. Bldgs. Admin., Federal Works Bldg., Wash. D. C., water supply facilities, at Charlotte Amalie, St. Thomas, and at Christiansted and Frederiksted, St. Croix. Plans deposit $50. R. L. Kenan & Assoc., Bell Bldg., Montgomery, Ala., consult. engrs.; adv. ENR 5/20.

Bids Asked

Tex., Baytown—Jones Development Co., c/o Greens Bayou, Houston, water lines. $30,000.

LOW BIDDERS

La., West Lake—Town, rejected bids May 4, WW sys. CD 4/15—ENR 4/22.

N. Y., Brooklyn—Comr. Water Supply Gas & Electricity, Municipal Bldg., New York, Zone 7, Apr. 22, furnishing, del. laying steel and c. i. watermains, appurtenances in S. 5 St. with connection at Shaft 14-A, from Oakhill Constr. Co. Inc., 74-20 Caldwell St., Maspeth. **$49,900.** CD 4/16.

N. C., High Point—City, T. E. Hinson, mgr., May 4, water and sewer imprvs., from Boyd & Goforth, 617 N. Smith St., Charlotte. **$90,602.** CD 4/27.

N. C., Mount Holly—Town, May 5, WW imprvs., base bid from A. P. White & Assoc., 205 Brandywine Ave., Charlotte, **$51,824;** tank, bid, from Chicago Bridge & Iron Co., Haley Bldg., Atlanta, Ga. **$13,480.** CD 4/23—ENR 4/29.

LOW BIDDERS

O., Toledo—Comrs. Lucas Co., May 11, Water Supply Line 264, Westwood Gardens and Ext., from Johnson & Mills Constr. Co., 50 Broadway, **$58,745;** Water Supply Lines 293, 296, 299 and 290, from L. H. Halpin, Maumee, **$32,583.** CD 4/28—ENR 5/6.

Okla., Bartlesville — City, Apr. 26, laying 5½ mi. 20 in. concrete water line from Butler Creek, from Jim S. Thompson, 1705 N.W. 38 St., Oklahoma City, **$66,791.** Est. $120,000. CD 4/7—ENR 4/15.

Tex., Beaumont—City, W. J. Brookman, clk., May 4, pump station at Lawsons Crossing, from Tellepsen Constr. Co., 3900 Clay St., Houston. **$101,875.** Est. $80,000. CD 4/16—ENR 4/22.

Tex., Spur—City, Martin Pope, mayor, Apr. 29, 500,000 gal. rein.-con. water storage, chlorination facilities from Fitzgerald, Newton & Carey, Route 2, Box 496, Waco, **$10,860.** Est. $65,000. CD 4/6—ENR 4/8.

CONTRACTS AWARDED

N. Y., New York—Comr. Water Supply, Gas & Electricity, Municipal Bldg., hauling, laying watermains, appurtenances in Bradhurst, Edgecombe and 4 Aves.; Horatio, Mercer, Reade, E. 126, W. 142 W. 144, W. 146 and W. 153 Sts., Bowery and Astor Pls., Manhattan Boro, to Ralph Facciolo, 2245 E. 5 St., Brooklyn, Zone 33. **$126,000.** Bids 5/4. CD 4/26.

●**O., Portsmouth**—City, water filtration plant, to Charles Shook Co., 582 W. 2 St., Dayton. **$1,019,400.** CD 8/3/45—ENR 8/23/45.

Pa., Stouchsburg—Stouchsburg Water Works Co., Stouchsburg, WW Addns., imprvs., own forces. **$35,000.**

Utah, Kanab—Town, Mrs. Marie McDonald, recdr., 1 m. g. rein.-con. reservoir, to W. E. Thatcher Co., 314 Kiesel Bldg., Ogden. **$17,132.** R. G. Harding, Utah Savings & Trust Bldg., Salt Lake City, engr. Bids 5/4.

Wis., Racine — Bd. Water Comrs., Racine, furnishing c.i. pipe, to American Cast Iron Pipe Co., 2930 N. 16 St., Birmingham, Ala. **$92,658.** Bids 4/19. W. A. Pierce, c/o owner, engr.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings

Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
● Project of $1,000,000 or over.
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

SEWERS, WASTE DISPOSAL

Construction Reports received since this section went to press will be found in Last Minute Construction Reports.

BIDS ASKED

Bids Asked May 25

Md., Hyattsville—At office Washington Suburban Sanitary Comn., Hamilton St., furnishing, del. equip. for primary tank unit, primary and secondary filter and final settling tank, Contr. 496-S; direct feed chlorination apparatus, Contr. 498-S; sewage plant equip., pumping equip., Contr. 497-S.

Minn., Owatonna—City, Gladys Phelps, clk., 16,810 lin. ft. sanitary sewer extens. in Sanitary Sewer Dist. 4. $50,000. Plans deposit $10. C. D. Philstrom Owatonna, city engr.

Bids Asked May 26

Ont., Scarborough—Scarborough Twp., c/o E. Knott, clk., 1660 Kinston Rd., Toronto, trunk sewers, outfalls, pump house, force main, etc. $90,000. Proctor-Redfern & Laughlin, 11 Jordon St., Toronto, engrs. E. M. Baird, city engr. CD 11/9/43—ENR 11/11/43.

Bids Asked May 27

Nevada—State Dpt. Hys., Carson City, 2,115 lin. ft. sanitary sewer in Sparks exten. from Dpt. Hys. office and shop of Reno Plant to connection with sewerage sys. of Nevada State Hospital for Mental Diseases. Plans deposit $10, $5 refundable. W. T. Holcomb, Carson City, state hy. engr.

Bids Asked May 28

Wis., Milwaukee—Sewerage Comn., Jones Island, 1 story, 27 x 110 ft. steel pile, brick, steel locker and washroom, rein.-con. fdn. $50,000; fdn. for steel piles and rein.-con. turbo-dryers, $95,000, at Sewage Treatment Plant. Plans deposit $5 each. J. L. Ferebee, ch. bee, ch. engr. CD 5/6, under Public Bldgs.

Bids Asked June 1

Pa., Souderton — Souderton Boro, sanitary sewers. $60,000.

Utah, Cedar City—City, c/o John G. Lowman, city engr., City Hall, 10,000 lin. ft. 10 and 15 in. sanitary outfall sewer and sewage treatment plant. $100,000. C. J. Ulrich, 422 Ness Bldg., Salt Lake City, consult. engr. CD 10/21—ENR 10/23.

Bids Asked June 3

O., Warren—City, incinerator, on S. Pine Ave. $220,000. CD 8/20/46—ENR 9/5/46.

Bids Asked June 7

Minn., Red Lake Falls—City, W. Nieland, clk., sanitary sewers, lift station, watermain extens. $50,000. Plans deposit $10. W. C. Larson, Detroit Lakes, engrs.

Ore., Newberg — City, City Hall, sewage treatment plant and trunk sewer. $75,000. Weller Probasco, city engr. CD 3/11/46—ENR 3/21/46.

Bids Asked June 8

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, sanitary sewers in Durfee Ave. between Citronell St. and 1st Alley south of Walnut Ave. in Pico, C. I. 1162. $258,800.

Bids Asked June 9

Calif., Los Angeles—Los Angeles Co. Sanitation Dist. 3, 1206 Maple Ave., Water St. 15- to 36-in. rein.-con. trunk sanitary sewer. $100,000.

Bids Asked June 15

†**Tenn., Oak Ridge**—Roane—Anderson Co., P. O. 456, Oak Ridge, storage bldgs. for East and West Sewage Plants, CPFF Contr. No. W-7401-eng-115, Inv. 48-31. Plans deposit $5.

Bids Asked June 30

●**Calif., Los Angeles**—City, Bd. P. Wks., 153 City Hall, power and blower plant of Hyperion Activated Sludge Plant, Unit S-R, S.A. Proj. 1. $3,000,000. Plans deposit $25. CD 6/6/47—ENR 6/26/47.

Bids Asked

Tex., Baytown—Jones Development Co., c/o Greens Bayou, Houston, sanitary sewers. $50,000.

Ont., Cumberland — Cumberland Twp., c/o R. J. Kennedy, clk., Marshall-Seguin Drain, 3,638 cu. yd. earth excav.; Simpson Drain, 1,680 cu. yd. earth excav.; Shaw Creek Drain, 16,640 cu. yd. earth excav.; Bear River Drain, 1,420 cu. yd. rock excav., 560 cu. yd. other excav. About $30,000. H. J. Walker, c/o owner, engr.